Antiquity

A Quarterly Review of Archæology

Edited by
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NO. 121 MARCH 1957

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Published at Ashmore Green, Newbury, Berks., England

Price: Single Copies 7s 6d—Annual Subscription 30s (or 5 dollars)

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EDITORIAL NOTICES

ANTIQUITY is published quarterly on the 1st of March, June, September and December.

The ANNUAL SUBSCRIPTION (including postage) is ONE POUND TEN SHILLINGS Sterling, or FIVE DOLLARS, payable in advance to ANTIQUITY, Ashmore Green, Newbury, Berks., England. SINGLE COPIES may be obtained for 7*s* 6*d* (post paid).

Everyone wishing to subscribe, or to obtain single copies, is asked to write direct to the Publisher, H. W. EDWARDS, Ashmore Green, Newbury, Berks., England. Tel. Thatcham 2105.

MSS (whether in the form of Articles or Notes) offered for publication should be sent to O. G. S. CRAWFORD, Nursling, Southampton, England, and a stamped and addressed envelope enclosed. All MSS should be typewritten. The Editor is not responsible for the opinions expressed by contributors.

BOOKS for REVIEW should be addressed to the EDITOR OF ANTIQUITY, Nursling, Southampton, England.

As ARTICLES are paid for, offprints are not supplied except on demand; they may be bought from The Whitefriars Press Ltd., if ordered at least three weeks before date of publication. Offprints of Notes are not supplied.

Antiquity

VOL. XXXI No. 121 MARCH 1957

Editorial Notes

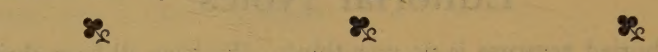
THE lure of buried treasure is no new thing. We have all been thrilled by stories of pirates' hoards and the like, and of the elusive scrap of paper that recorded where the pieces of eight or the jewels were buried. Probably the last thing an excavator would expect to find would be a clue to hoards buried nearly two thousand years ago; it is just too bad that when one such actually is found it should turn out to be a delusion. Here is the sad Story of the Two Copper Rolls found in 1952 in a cave in the Desert of Judah.[1]

They were found by an expedition organized by Palestinian archaeologists digging in the famous Qumran caves which produced the scrolls of biblical texts, and consisted of two rolls whose metal had all been converted into brittle oxide. After prolonged experiments it was decided that, as they could not be unrolled, they should be cut into strips with a rotary saw of the type used to split pen points. The operation was successful, and no part of the text was lost in the process. The work was carried out by Professor H. Wright Baker, of the Manchester College of Technology, and the strips have now been placed in the Jordan Museum at Amman. The document is dated by the character of the writing to about the middle of the first century of the Christian era. It contains a list of about sixty treasures and describes where they are hidden. The caches are scattered all over Palestine, but chiefly in Judaea and more particularly in Jerusalem, in the Temple precincts and in the cemetery of the Kedron Valley. They are supposed to have been deposited in cisterns, pools, tombs, cairns and such-like places. Sometimes the sites are those traditionally associated with well-known persons, such as the cairn of Achan who was stoned in the Valley of Achor.

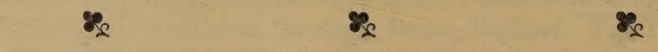
These are typical descriptions: ' In the large cistern which is in the Court of the Peristyle, in a recess at the bottom of it, hidden in a hole opposite the upper opening: 900 talents '. ' At Zadok's tomb underneath the pilaster in the exedra: a vessel of incense in pine wood, and a vessel of incense in cassia wood '. The last item describes the position, in a hole near Zadok's tomb, of ' a copy of this document with explanations, measurements, and all details '. The total amount of the treasures exceeds 6,000 talents, equivalent to more than 200 tons of silver and gold! It goes without saying that the document is not a

[1] Based upon an article in the *Biblical Archaeologist* for September, 1956, by J. T. Milik, by kind permission of the Editors.

historical record but belongs rather to the genre of folklore. It is best understood as a summary of popular traditions set down by a semi-literate scribe—a member probably of the group of hermits who lived in the caves nearby and presumably associated with the Essene community. The document is unlikely to be in any sense Essene or official, but a private effort, perhaps the work of a crank. Parallels of the same or a later date are known to scholars. Though its historical value is negligible its linguistic interest is regarded as considerable. To the account summarized above we would add that traditions of buried treasure are not confined to Palestine but occur all over the world, particularly in relation to ancient tombs. They probably arose from the fact that in prehistoric and even later times (at Sutton Hoo for instance) intrinsically valuable goods *were* buried with the dead, and no doubt occasionally dug up by treasure-hunters, who have ruined thousands of ancient sites by their random diggings.



To go to an entirely different subject:—A discussion has arisen about those volumes of essays called, in the country of their origin, Festschrifts. These are printed and presented to eminent scholars by their colleagues, usually on their sixty-fifth or subsequent birthdays. Having himself been honoured by the presentation of a Festschrift, the writer of these Notes is naturally somewhat handicapped in the discussion; but he hastens to say that, like others of his colleagues, he regards it as the highest honour that a scholar can receive, for it is given for merit by those best able to judge of it. The trouble is that for many reasons the contents of Festschrifts are sometimes unknown to those who might profit by them. They are a pleasant way of showing honour to a scholar of eminence and standing, and they give him great pleasure. On the other hand, in these days of costly printing, their publication should be carefully considered not only from the financial point of view but also for their contents. Often the volume becomes a miscellaneous collection of essays of very varying quality about a large variety of subjects with no kind of unity. Indeed the very merits of the recipient—his wide range of interests—may contribute to this lack of unity; for contributors' interests will also range widely. Essays that are valuable in themselves are apt to become buried and forgotten because they appear in isolation from their normal context, the relevant learned periodical. But a practice is coming into fashion which avoids this danger; it consists in dedicating a particular volume of a periodical or journal to a scholar. The Festschrift offered to Professor Childe last year, for instance, was a regular (but rather bigger) number of the *Proceedings of the Prehistoric Society*. Thus unity of subject is obtained and the cost of publication very considerably reduced. The bibliographer then knows where to look for a paper, and librarians are saved from the troublesome business of classifying miscellanea.



If this is not possible, then surely the volume offered should be strictly confined to one subject, however widely treated, and that subject should be related to the known interests of the scholar concerned. The size and cost of the volume should be kept within reasonable limits. The volume recently offered to Miss Hetty Goldman is an example of this kind of Festschrift. It is called *The Aegean and the Near East*, is published by J. J. Augustin (Locust Valley, New York, 10 dollars), and consists of twenty-two essays all falling within the scope indicated by the title, and a bibliography of Miss Goldman's writings. The subject of Festschrifts has been fully discussed and the pros and cons admirably stated, with detailed statistics, by Dorothy Rounds and Sterling Dow in the *Harvard Library Bulletin* (Vol. viii, 1954, 283–94).

EDITORIAL NOTES

ANTIQUITY is read by many librarians; we therefore take the opportunity of asking them if they have ever come across a book, regarded as lost, that would be of great historical interest if it could be found. It is about the Canary Islands and was published at Caen by Lancelot de Maloisel in 1632 (see De la Roncière, *Découverte de l'Afrique au Moyen Age*, Cairo, 1925, ii, 3, note 2). It appears that these islands were re-discovered in 1312 by some shipwrecked sailors coming from Cherbourg. They were commanded by a Genoese serving under France who had changed his name from Lanzeroto Malocello to Lancelot Maloisel. The island of Lanzerote was called after him. In 1632 the family, then firmly established as Norman squires and still bearing the name of Maloisel, printed at Caen ' a little discourse claiming for Lancelot, rather than for that other Norman, Jean de Béthencourt, the distinction of being the first conqueror of the Canaries '. Lancelot was said to have ruled [Lanzerote ?] for twenty years, after which he was turned out by a revolt of the islanders.

Librarians and all our other readers are reminded that copies of the General Index of ANTIQUITY, vols. 1 to 25 (1927–51), are still available and may be obtained from the Publisher (H. W. Edwards, Ashmore Green, Newbury, Berks, England) on receipt of a cheque or notes for £2 10s. ($7.50). This Index is in fact rather more than just an Index, for it covers a period of great archaeological progress, rich in research and discoveries, many of which were duly recorded and discussed at the time in ANTIQUITY. The illustrations are regularly used by writers of books and articles, who will find this Index useful for quickly locating any they may be in need of. The hundreds of reviews of books, indexed separately, will be found invaluable by bibliographers and students generally. The Index is in fact also an epitome of a period and a useful book of reference.

We are asked by the Keeper of the Museum of English Rural Life (7 Shinfield Road, Reading, Berks., England) to say that he is trying to locate all known examples of Roman and Early Iron Age ploughshares and coulters, and would be glad to have details of them. To make this easier a form will be supplied, giving headings (with explanatory diagrams) of the information required. Research on the subject is being done by Mr F. A. Aberg of the Museum, and the results of this enquiry will also be sent to the International Secretariat on the History of Agricultural Implements, which is located in Copenhagen.

The Editor receives many letters of enquiry from readers of ANTIQUITY and others. He always tries to answer these to the best of his ability, whether they are about archaeological matters, or about choosing a career, or the best place to go for a holiday. It helps considerably if a stamped and addressed envelope is enclosed, and he might add that this is essential when manuscripts of proposed articles are sent to him. We would remind our readers that ANTIQUITY has not the advantage of a large staff; indeed it has no staff except the Editor and Publisher. One of the ways in which our readers can help is by sending in their subscriptions when they are due, which is now. Subscription forms are only inserted in the copies of those subscribers who have not yet paid them; so if there is one in this number it means that you have not yet paid. The sending out of reminders consumes much time and money, which would be better employed. Thank you!

ANTIQUITY XXXI, 1957

Mycenaean Records: A Review*

by T. B. L. Webster

London University

MICHAEL VENTRIS was killed in a motor accident on 6 September, 1956. There is no doubt that he was a genius and where that genius would have led him next is unpredictable. He was also a person of peculiar distinction and charm, who inspired not only the admiration but also the affection of the many people with whom he came in contact. The sense of personal loss is irreparable. It is some small consolation to know that, as regards Linear B, he had probably achieved a great deal of what he wanted to achieve, and this book is a worthy memorial to that achievement.

Two impressions strike the reader at once. First the immense amount of scholarship of different kinds, linguistic, archaeological and historical, that has gone into it in an extraordinarily short time, since only three years separate the publication of the original article in the *Journal of Hellenic Studies* from the publication of this book. This period included a great deal of intensive work on the tablets in many different countries, and the authors have taken this into account and have dealt very justly and courteously with all their fellow-workers. The second impression is the beauty and clarity of the book production, which is up to the highest standards of the Cambridge Press.

The first chapter tells the story of the decipherment from the original discovery of the Knossos tablets through the years of stagnation before Blegen's essential discovery of the Pylos tablets in 1939 to Ventris' recognition that the language must be Greek in June 1952. Full credit is given to earlier workers and particularly to the lamented Alice Kober, who produced a series of invaluable articles before she died in 1950. When Ventris decided that the language must be Greek, ' Myres put Ventris in touch with John Chadwick, who had been working independently on Linear B in Oxford for six years and whose cryptographic flair and specialized knowledge of the Greek dialects have been invaluable in all our subsequent collaboration '. The article in the *Journal of Hellenic Studies* 1953 was the starting point for a number of scholars in different parts of the world and working groups were set up in London, Paris, Uppsala and elsewhere. The first international colloquium was held in Paris in Easter 1956.

The book goes on to discuss the Mycenaean writing system in its development from hieroglyphic through Linear A to Linear B and related scripts in Cyprus. (For Linear A the Swedish scholar A. Furumark has announced important results very recently, and it can now be regarded as certain that the language is not Greek.) This chapter includes some most ingenious criteria for establishing the values of weights and measures. The language is then analysed and the relation of Mycenaean to historical dialects is stated, and phonology, morphology and syntax are discussed. A special chapter deals with personal names, distinguishing them by their grammatical form and listing fifty-eight names which can be exactly paralleled in Homer and noting that many more are similar but not identical. The final chapter of the first part of the book summarizes the information about the Mycenaean age which can be derived from the tablets. Contemporary tablets from Ugarit, Alalakh, Bogaz-Keuy and Nuzi, and earlier tablets from Mesopotamia, and on the Greek

* *Documents in Mycenaean Greek*, by Michael Ventris and John Chadwick. Cambridge University Press, 1956, pp. xxxi + 452 pp. £4 4*s*.

side Mycenaean objects and Homer are freely used to illustrate and explain the Mycenaean records. Separate sections deal with Mycenaean literacy, bureaucratic methods, arithmetic, social organization, religion, agriculture and land tenure (it is fascinating to have a list of foodstuffs actually found on Mycenaean sites), trade and industry, and geographical names, which are listed separately for Pylos and Knossos. This chapter will be of very great value to the historian and is characterized not only by brilliance and width of scholarship but by caution in refusing to go beyond the evidence.

The same qualities can be seen in the second part, which consists of transcription, translation and commentary for three hundred tablets grouped under the headings: lists of personnel, livestock and agricultural produce, land ownership and land use, proportional tribute and ritual offerings, textiles, vessels, and furniture, metals and military equipment. The selection is extremely skilful: every group of tablet is represented and no important tablet is omitted. The number of tablets selected in any group depends on the amount of extra information that they convey. For the Pylos women tablets seven adequately represent the total of 92, and about a dozen sheep tablets do duty for the many hundreds that have survived from Knossos, but in each case a full introduction discusses the whole range. On the other hand a very full selection is given of the Pylos land tablets, which show many variations in phraseology, and of the Pylos furniture tablets, which deal with many different kinds of object; for these, archaeological parallels from Mycenaean sites and elsewhere are quoted. (Those who need the full range of tablets can refer to Michael Ventris' transcription of the *Knossos Tablets* [Institute of Classical Studies, London: Supplementary Papers, no. 2], and E. L. Bennett's *Pylos Tablets* [Princeton University Press, 1955], which gives a transcription in the index; there is hope that a complete transcription of the Pylos tablets will shortly be published.) The selected tablets are presented with introduction, transcription of the signs into standard values, translation and full commentary, which pays critical but courteous attention to the views of other scholars. All is extremely well done; among these riches I note the following details: Pylos 171 is made to provide an extremely interesting commentary on the Hagia Triada Sarcophagus. Pylos 172 is compared with the Cupbearer and Procession frescoes from Knossos. Pylos 237 gives boiling-pans and fire-tongs, which associate curiously with elaborately decorated and inlaid tables, chairs and footstools. This whole set obviously belongs to the ' gift machinery ' recently interpreted by M. T. Finley in the *World of Odysseus*. It is interesting to note that the trousseau of Ahat-Milku (Nougayrol, *Palais Royale d'Ugarit*, III, 187, no. 16.146 and 161) includes cooking-pots and stoves as well as inlaid furniture. Pylos 255: the authors have worked out the allocation of bronze to smiths in terms of arrowheads, sword blades, and spear-heads. Dr Reinhard Lullies tells me that a Mycenaean dagger blade 23·8 cm. long now weighs 208 gr. and a Mycenaean spearhead 44 cm. long now weighs 230 gr. (both are in a German private collection). Pylos 258: the value of the minimum standard weight for gold is equated with standard weights in the Mycenae Acropolis treasure. Pylos 292: the discussion of helmets is extremely valuable and with the new texts may well fix the meaning of several Homeric words.

The book concludes with a Mycenaean vocabulary, an index of personal names, bibliography, general index and concordances of tablet numbers. Place-names are listed in the first part and are excluded from the vocabulary. The vocabulary is based on the whole range of tablets excavated up to 1955 and contains 630 separate ' words ', of which some 40 per cent. have forms which can be equated with classical forms. The personal names include all those in the selected tablets and all those in the other tablets which have a possible parallel in known Greek names or in vocabulary. These two indexes with the list of place-names provide the essential tools for dealing with the tablets not included in the

selection. This book seems to me a model: the arrangement and layout are excellent, the maximum possible aid is given by cross references and indexes, introduction and commentary show widely based and brilliant scholarship, coupled with clear marking of uncertainties and dangers.

Thus the foundations are soundly laid for future work. They are sound because the authors are cautious; but because they are foundations laid by a cunning architect, they will determine to a large degree the shape of the building. These are the records of Mycenaean palaces (even the houses in which the tablets were found at Mycenae are likely to be outhouses of the palace). Because they are written in Greek, they tell us a great deal about the Greek language half a millennium and more before Homer. Because they record Mycenaean civilization in Mycenaean terminology, while Homer was writing in Ionian Greek at the beginning of the *polis* civilization, they show, when joined with other evidence, how much in Homer is Mycenaean, and where we can say that these Mycenaean elements cannot have survived till Homer's time, they tell us something of the poetry which bridged the gap. Because many of the personal names are known from mythology, which was already supposed to go back to Mycenaean times, they pose the question of what Greek mythology was already existent. Because they give us the names of Greek gods then worshipped, they make a new assessment of the earliest Greek religion and its relation to Minoan religion desirable. Because they prove that Mycenaean civilization was a Greek-speaking civilization, they show also that Mycenaean art is Greek art; except for a comparatively small number of imports, objects of art on the mainland from the Shaft Grave period and in Knossos at least from the middle of the 15th century must have made sense to their Greek-speaking owners and must have been explicable in Greek terms. Because Linear B is derived from Linear A, communication between Greeks and Minoans is proved, and the Greek occupation of Knossos (and probably many other parts of Crete, as the tablets and Idomeneus' contingent suggest) is likely to have been followed by the borrowing not only of script but also of stories, and by the borrowing not only of art techniques and forms but also of the ideas conveyed by those forms, since here Greek and Minoan artists were working side by side and could communicate with each other. Because Asiatic words were found in the tablets, we can suppose that the Mycenaean out-stations in Ugarit and the port of Alalakh were to some extent bilingual (and the Hittite correspondence shows that verbal communication between the Greek world and the Hittite world was possible); we can therefore surmise that Eastern stories entered the Mycenaean repertoire, but there is no reason to suppose that Eastern works of art which found their way to Greece carried their interpretation with them, except on the possible occasions when the artist himself travelled; when Mycenaean artists on the mainland were inspired by imported works of art, their interpretation would be a new Greek interpretation, which need bear no relation to what the Eastern artist meant. Because the Mycenaean palaces used tablets and the tablets can now be read, Mycenaean civilization becomes comparable with other civilizations which used tablets at this time.

The authors have used contemporary and earlier tablets with great effect for detailed commentary, but it may be useful here to try and put together a more general picture of society in the second millennium, especially as Nougayrol's volume of inscriptions from Ugarit (see above) has been published since *Documents* went to the press, and a little can be added also from the correspondence between the king of Mari and his superiors and inferiors (Parrot and Dossin, *Archives royales de Mari*). The head of the state is the King. His name (*wanax*) and the name of his land (*temenos*) show that he is in some sense divine, since after Homer these words are (with explicable exceptions) reserved for gods. He is Zeus born, Zeus nurtured, dear to Zeus, honoured as a god, etc. So in an ivory panel from

Ugarit the King drinks from the breasts of the goddess, and in Alalakh and by the Hittite' the King was called ' beloved of the god '. The King had a household and ' companions (*e-qe-ta* on the tablets), grandees of noble family with chariots, uniforms, male and female slaves. They must have been something like the Hittite ' Great family ', and in Ugarit we hear of ' sons of the Queen ' and ' Counts of the Queen ' as ranks.

Below this, there is a broad distinction between settlers, who own private land, and workers of village land, which L. R. Palmer (*Transactions of the Philological Society*, 1954, 37 ff.) fruitfully compared with the Hittite distinction between the ' men of feudal service ' and ' the men of the tool '. One of the words for feudal due on the Mycenaean tablets is *o-pa*, and the range of dues includes chariots, horses, corselets, helmets, arrows, rams, cloth, wheat and oil. It looks as if the settlers formed the chariotry of the Mycenaean states, just as the chariotry form the top class in the Alalakh census lists and similarly come below the Counts at Ugarit. The craftsman level (if we may so call it) is organized by villages, and their Mayors are important people ranking above the settlers (cf. *Docs.*, no. 43 and vocab.); in Alalakh the mayor of one village is reckoned among the chariotry, and in Mari the appointment of a mayor was accompanied by a royal gift of silver and sheep (and other things, which have been lost in a break); it is tempting to compare this with Pylos no. 235, but perhaps ' when the King appointed Sigewas to be a *damokoros* ' merely gives the date and the long list of furnishings are unconnected with the appointment of the mayor. In Ugarit, which is probably commercially the most highly developed of these societies, the craftsmen appear to have been organized in corporations which held land; in Pylos ' the estate of the swineherds ' is referred to such a collective association (*Documents*, p. 134), but grammatically a single royal swineherd like Eumaios is equally possible. The boundaries between these various classes are fluid. The Hittite code includes provision for up- and down-grading, and in Ugarit a man may assume ' the duties of the sons of the Queen ' or be placed ' among the Counts of the Queen . . . and the Mayor will not enter his house '. So in the Pylos tablets we find a settler holding common land as a private portion and a shepherd and a fuller holding a portion of settlers' land; the man, who pays a contribution *e-ne-ka a-no-pa-si-ja* ' because he is free of *o-pa* ' (?), may be a case of down-grading.

All these palaces also recorded the labour force, its rations and operations. The Mycenaean tablets give little or no background to these lists, but other palaces sometimes provide this. Thus the King of Mari tells the governor of Terqa to inspect the men of his district ; he swore in inspectors in every town and they wrote down the names of the men; the tablets were then copied and sent to Mari. Or he demands a labour gang of boys and girls from the governor of Terqa and the governor sends men to the villages to raise them: this might well give the background for the Pylos Aa, Ab, Ad tablets. A tablet in Ugarit instructs eight villages to supply each a number of days' work on the reconstruction of another village; this recalls the ' masons who are to build ' of Pylos. The Knossos Dk tablets record sheep and wool and deficiency in wool ; the amount of wool plus its deficiency is proportionate to the number of sheep; these seem to be records of shearing ordered by the palace, and may be compared with a note from Alalakh of the amount of wool plucked by Kipugga from 308 sheep: ' 2,700 shekels of wool are no good '. The whole process can be seen in a letter from a district officer to the King of Mari; he cannot carry out the King's instructions to shear the sheep because he has not been sent enough men to do the shearing; the sheep have been washed, and the weavers, who have been assembled, are idle.

The authors quote very full parallels from elsewhere for military equipment and supplies; two may be added for the rare operational tablets from Pylos. The big list of rowers (no. 54), of which the total adds up to 443 men, is an earlier stage in preparations

than the tablet from Ugarit, which was compared by V. Burr (*Klio: Beiheft* 1944) with the Homeric Catalogue of Ships; there numbers of men from different places are distributed among ships. The small military forces called *o-ka*, each with its Count (nos. 56 f.), may perhaps be compared with the small, special forces in Alalakh, which are composed of a small number of charioteers, a number of warriors with names of their villages, and attendants.

In spite of the strong individuality of the different centres the likeness shown by these palace records of the second millennium is clear. There are two strange differences. The first is that we do not even know the Mycenaean word for scribe, although elsewhere these officers advertise themselves proudly. The second is the absence of literary texts, letters and juridical texts from Mycenaean sites. We cannot say that they did not exist, because they may have been stored in places that have not survived or (as the script itself suggests) have been written on material other than clay. The probability that the Mycenaean kings corresponded with each other and with other powers is very high, as the likeness of the script in different Mycenaean centres, the Hittite records and the Bellerophon story show. The long summary of Pylos land tenure with its notes of default and disagreement proves the possibility of juridical texts; and if the scribes recorded *themistes* in the sense of feudal dues, they may also have recorded *themistes* in the sense of rulings which the King received from Zeus, just as Hammurabi received his laws from the god of justice. Whether the conditions under which oral poetry was recorded in Ugarit, Bogaz-Keuy, and elsewhere, also obtained in Mycenae is less clear, but script and material were there.

Enough has been said to show that this book opens a new world, and it is heartbreaking that the ingenuity, wisdom and sanity of Michael Ventris can no longer guide us in its exploration.

Postscript. Professor A. J. Beattie's ungenerous attack on Michael Ventris was published in the *Journal of Hellenic Studies* after I had written this. *Documents* itself is the best refutation with its verifiable account of the procedure of decipherment and its interpretation of the tablets. Professor Beattie's mathematics show how many imaginable sounds a given group of signs can represent; this is valueless; the question is how many Greek words relevant to the particular context they can represent; these texts were written by professional scribes for professional scribes, and laboratory slang is always difficult for outsiders. Even so the furniture tablets (dismissed in two lines and a misleading footnote) were transcribed and interpreted by four scholars completely independently with about 75% agreement; they were discovered after the decipherment had been made, so that Michael Ventris could hardly have ' put the Greek there '. Professor Beattie's recognition of Greek is of course hindered by his failure to transcribe the signs accurately: he has made nonsense by failing to recognize *sa*, *ke*, *ta*, pa_2, *jo*, *mu*, *za*, ro_2. On Greek usage the authors seem to me always sounder than he is and there is no point in repeating their interpretations: for instance, his objections to the list of Cretan divinities in no. 208 are groundless: (1) the position of *potnia* before Athena in Homer is due to metrical convenience; the natural order is *Athena potnia* as in the tablet, (2) Enyalios is only once an ' epithet ' in Homer, elsewhere a god (several times in a formula attached to the Cretan Meriones), (3) Paieon is the doctor of the gods in Homer; why should this be ' poetic artifice ' rather than ancient religion?

ANTIQUITY XXXI, 1957

Salina : A Prehistoric Village in the Aeolian Islands*

by Madeleine Cavalier

THE Aeolian Islands are situated off the north coast of Sicily, not far from the entrance to the Straits of Messina. They can be reached by a daily service of steamboats from the port of Milazzo, 20 miles west of Messina. There is a daily train, called Freccia di Sul, that goes direct from Milan to Palermo, stopping at Milazzo. The northernmost of the islands is Stromboli with its famous active volcano. The chief town is Lipari on the island of that name; here on its acropolis excavations directed by Professor Bernabo Brea on behalf of the Soprintendenza alle Antichita della Sicilia Orientale have revealed a stratified succession of huts, ranging from the neolithic period down to Hellenistic,[1] Roman and modern times. These excavations and others on other islands have shown that, small though they be, the islands once played an important part in the culture of the western Mediterranean.

Lipari is rich in the volcanic glass called obsidian, and it was upon the export of this, the raw material of implements, that the prosperity of Lipari during the neolithic period was based. Then there followed a period of decline, due probably to the fall in the demand for obsidian which must have followed the discovery and use of copper for implements. But prosperity returned in the Bronze Age (about 1600–1250 B.C.); commercial relations had begun between the Aegean lands and those of Western Europe, and the islands' favourable position on the trade-route and the inhabitants' navigational skill and experience enabled them to take an active part in it. The trade took the form of an exchange of the finished products of Mycenaean industry and art on the one side with such raw materials as British tin on the other. Our excavations have brought to light much evidence of that commerce, particularly in the form of imported Aegean pottery of the Middle and Late Helladic periods (*c.* 1600–1250 B.C.). Under the influence of this higher Mycenaean civilization the culture of the Aeolian Islands reached the highest point attained during the prehistoric period. Not only was the acropolis of Lipari—always the most important inhabited centre in the islands—then occupied, but villages also sprang up everywhere, even on the smaller islands of Filicudi, Panarea and Salina.

The types of pottery and the style of its decoration enable us to detect two phases in the Aeolian culture of this period. The older one is named after Capo Graziano in the island of Filicudi, where is a village that has become the type-site. The younger is named after Milazzese, a promontory settlement on the island of Panarea.[2] The chronological division between these two phases falls at about 1425–1400 B.C.

In May and June, 1955, Professor Bernabo Brea and I did some prospecting in the smaller islands and especially Salina. We located two prehistoric settlements on the east coast of Salina near the small town of Santa Marina. On the Serro del Cianfi was an Early Bronze Age village that had been channelled away and destroyed by rain-gullies; there remains nothing but a cone of redeposited material containing a mixture of Capo Graziano and Milazzese potsherds, a few proto-Mycenaean sherds and kitchen refuse.

The other village, just under a mile away to the north, belonged exclusively to the Milazzese phase; possibly it took the place of the first, coming into existence when the earlier one disappeared. It is at a spot called La Portella, commanding a col that has to be

* Translated by the Editor.

crossed by the road from Santa Marina to Malfa in order to avoid the very high sea-cliffs (PLATE I, A). The village was discovered during the construction of this road, when a deep cutting was made through the col and some huts were destroyed by the workmen, as they informed us. The village extends over the top of a long and very narrow ridge on the steep slopes of Monte Rivi (2642 feet), flanked by two deep valleys cutting into the loose friable soil of volcanic pebbles and ashes of which the mountain is formed (FIG. 1). This ridge which they chose differs from the many others running parallel to it in being bounded on either side by uniformly precipitous slopes. The steep wall on the north is unclimbable. At the middle of the south side the slope is broken for a short distance, giving access to a small terrace; only at this point was it necessary to reinforce the natural defences by art. Above the village the slope of the ridge is broken by a slight undulation of the surface—a kind of saddle that could be used in defence against an attack from the mountain above.

FIG. 1. PLAN OF THE LATE BRONZE AGE VILLAGE OF LA PORTELLA, SALINA, AEOLIAN ISLANDS

Below, the ridge ends at a precipitous sea-cliff. The choice of such a site here, as also at Panarea and Lipari, suggests a preoccupation with the needs of defence.

Ten huts were completely excavated; to these must be added at least three more destroyed either by erosion in the form of landslips or by road-making. The village did not extend to the top of the ridge which is entirely covered by thorn-bushes and brambles. The huts are arranged in pairs in the lower part which to-day is planted with olives, as far as the road-cutting and below it on the edge of the cliff. They are roughly round, sometimes slightly oval, sometimes of irregular shape conforming to the lie of the land. They are built into the side of the hill which thus forms the rear portion of the hut, so that on the upper side the hut-wall becomes a revetment (PLATE II). Only on the lower side was it a free-standing wall, but this side seldom remains, having been destroyed by erosion. Here, as at Panarea and Lipari, the walls are made of smallish stones of regular shape and size, including some large rounded beach-pebbles from a pleistocene raised beach lower down. The walls were probably never more than 4 or 5 feet high; otherwise they could never have withstood the strong winds which would have blown off the thatched roofs if they were much higher. The floors of the huts were usually covered with a thin layer of yellow clay. The doorways are narrow, and the threshold is sometimes paved with stone slabs (PLATE II,

B). In one hut a small round boulder found near one of the doorposts had a cup-shaped hollow, probably the socket in which the door pivoted.

The village came to a sudden and violent end. The huts fell into ruin, burying their contents. The floors, when we exposed them, were covered with a thick layer of cinders and charcoal, and with the broken fragments of large jars (PLATE II). These impressive relics are surely evidence of a disaster of the kind foreseen when the site was first chosen. Most of the remains are those of huge jars; each hut contained at least two and sometimes four such (PLATE IV, A). Amphorae, fruit-stands (PLATE III, A) and other finer ware were also found. One of the most characteristic types is that of a cup on a high hollow pedestal

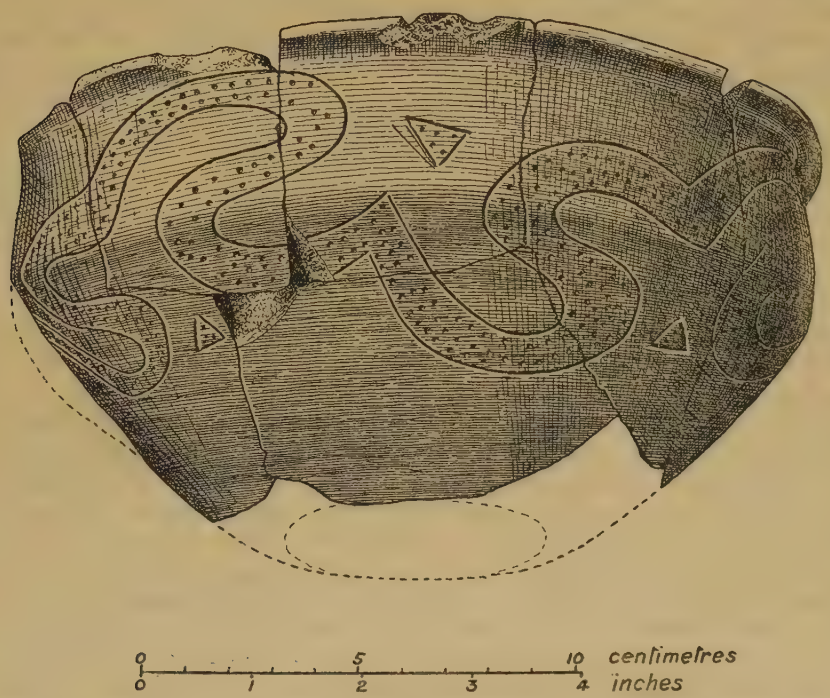


FIG. 2. LA PORTELLA; POT FROM HUT A, OF A TYPE FOREIGN TO THE AEOLIAN ISLANDS AND SICILY, BUT AKIN TO THE BRONZE AGE WARE OF ITALY

decorated with raised ribs and incised lines; the amphorae have the same decoration. Another common form is that of a high-necked pitcher with vertical handles (PLATE III, A, the two middle pots). Common and typical also are large pot-rings for supporting round-bottomed vessels. Very small pots are common, also spindle-whorls, curious hooks (sometimes double) and horns of baked clay, doubtless amulets for warding off evil influences. On the floors of all the huts were found querns, hammer-stones, pestles and mortars. The general run of the finds is the same as in the contemporary villages of Lipari and Panarea. The pot-types are almost exactly like those of eastern Sicily—Thapsos, Cozzo del Pantano, etc.[3]

Mixed with the local pottery are imported vessels of the Apennine culture of the Italian Bronze Age. Amongst typical examples may be mentioned a fine bowl ornamented

with volutes (FIG. 2). These vessels are of great importance because they provide a chronological link between the Aeolian and Apennine cultures. One hut (F) yielded actual Mycenaean imports (PLATE III, B); it may well have been the oldest hut in the village for, as can be seen on PLATE I, B, and FIG. I, it had been superseded by another (on the left) which partly encroaches upon it. The Mycenaean potsherds belonged to vessels of the Late Helladic (III, A) period;[4] the other Mycenaean find consisted of a necklace of beads of stone, glass paste and (best of all) faience (PLATE IV, B). The beads were found in a shallow hole in the floor of the hut. The great importance of the discovery lies in the fact that precisely similar segmented faience beads have been found distributed over an area extending from Egypt and the Mycenaean world in the one direction to Spain, France, Britain and Ireland in the other ; they are thus evidence of far-flung trade between east and west during the Bronze Age. The Salina find marks yet another stage in the trade-route, confirming the strong Minoan-Mycenaean influence which had already been observed in the culture of the Aeolian Islands. At the end of the civilized world—in fact, beyond it—we find similar traces of that influence in the blossoming of the Wessex Culture,[5] which has yielded so many other finds of these segmented faience beads. Yet further evidence of Aegean influence is to be seen in the incised symbols or potters' marks which have already been observed on potsherds from contemporary strata on Lipari acropolis, in the village of Millazzese on Panarea, in the cemetery of Milazzo in Sicily and again here in Salina.[6]

The violent destruction of the village of La Portella, which must be dated considerably later than the deposition of the beads and sherds, was not an isolated occurrence. One has the impression that the same thing happened at Milazzese, though there the evidence is slighter; the contemporary huts on the Lipari acropolis were certainly destroyed by fire. But whereas at Milazzese and Salina the occupation of the village was brought to a sudden and final end by the disaster, at Lipari there were deposited over the ruins of the huts strata containing pottery identical with that of the Italian Late Bronze Age villages. Now the legends transmitted by Diodorus[7] Siculus tell of a colonization of the Aeolian Islands at the dawn of history by Ausonians, a people of the Italian peninsula, led by their King Liparus who gave his name to the largest of the islands. Thus do archaeology and legend confirm each other here. We can give a name to the enemies, in fear of whom the islanders had to choose such uncomfortable but defensible sites for their villages. They were the Ausonians whose invasion, long expected and at last achieved, marked the end of the flourishing Middle Bronze Age culture of the Aeolian Islands and inaugurated a new era —a Dark Age which lasted five centuries and ended only with the Greek colonization.

NOTE.—The passage in *Diodorus Siculus* referred to above runs as follows (*Loeb Classical Library*, Vol. iii, 1939, 117):—

'We are told that the islands of Aeolus were uninhabited in ancient times, but that later Liparus, as he was called, the son of Auson the King, was overcome by his brothers who rebelled against him, and securing some warships and soldiers he fled from Italy to the island which received the name of Lipara after him; on it he founded the city which bears his name and brought under cultivation the other islands. And when Liparus had already come to old age Aeolus, the son of Hippotes, came to Lipara with certain companions and married Cyane, the daughter of Liparus; and after he had formed a government in which his followers and the natives shared equally he became King over the island. To Liparus, who had a longing for Italy, Aeolus gave his aid in securing for him the regions about Surrentum, where he became King and, after winning great esteem, ended his days; and after he had been accorded a magnificent funeral he received at the hands of the natives honours equal to those offered to heroes. This is the Aeolus to whom,

the myth relates, Odysseus came in the course of his wanderings [see *Odyssey*, x, 1 ff.]. He was, they say, pious and just, and kindly too in his dealings with strangers; furthermore, he introduced seafarers to the use of sails, and had learned, by long observation of what the fire [of the volcano] foretold, to predict with accuracy the local winds, this being the reason why the myth has referred to him as the " Keeper of the Winds "; and it was because of his very great piety that he was called a friend of the gods.'

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Dr J. F. S. Stone contributes the following note on the beads from La Portella, Salina:

This very interesting find of faience and glass beads in a Mycenaean context forms an important link in the chain of evidence for the dissemination of such beads from the Eastern Mediterranean to the south of France, and thence down the Garonne to Brittany and the British Isles. Their association with Mycenaean sherds of L.H. III A date (*c.* 1400–1300 B.C.) is important for dating their westerly movement, a date that receives confirmation from previous finds of similar beads with L.H. III A pottery in Siculan II graves at Thapsos and Plemmyrio, both lying near Syracuse and at one time incorporated in the Mycenaean commercial system. They have been found, too, in a cemetery at Malta which can be dated 1450–1350 B.C.

Similar movements of faience beads of other types in an easterly direction via the Black Sea to the Caucasus and Caspian Sea are now recognized as having taken place round about 1400 B.C., which is also the date when a distinct type of faience cylinder seal, probably of North Syrian origin, makes its appearance both at Prosymna and Mycenae in Greece, and in the Talysh region of the Eastern Caucasus.

I have in a recent paper on the use and distribution of faience in the Ancient East and Prehistoric Europe, which will appear shortly in the *Proceedings of the Prehistoric Society*, summarized our knowledge of the material; and from the evidence available have suggested that during the second half of the 2nd millennium B.C. the faience workshops of Egypt, the Aegean, and Northern Syria were turning out an ever increasing volume of goods, and that wider commercial interests and expeditions to uncharted lands reached something of a climax between 1500 and 1300 B.C. under possible direct inspiration from Mycenae. During this period, imports of amber to Greece from the Baltic also reached something of a climax in Mycenaean III A times (1425–1300 B.C.), and this trade may well be linked with the dispersion of faience beads which are now so well marked in Central Europe.

The actual source of origin of many of these faience beads still remains obscure. As

yet, no chemical or spectrographic methods of analysis have been found which will distinguish without question between products from possibly different countries. We still have to rely almost entirely on morphological characters and archaeological associations which remain our only sure guide to identity or otherwise. Thus the only *segmented* faience beads that have been found to be identical with those occurring in the British Isles were some on a necklace from a grave of Abydos, in Egypt, associated with a scarab of Amenhotep III and thus dated 1408–1372 B.C.; and others contemporary with Fosse Temple I at Lachish, in Palestine, which were found with a faience plaque of Amenhotep II (1450–1425 B.C.).

Egypt had for long specialized in the art and had turned out immense quantities of beads; and at Tell el Amarna actual faience factories have been found. North Syria also turned out faience objects but no factories have so far been located, and the country does not seem to have specialized in the types of bead current in Europe. Evidence for Mycenaean factories is also lacking, but some authorities consider that certain faience objects found in Greece must be of local manufacture. This may well be; and it is by no means inconceivable that they copied or tried to copy current Egyptian types. Certainly some few fragments of segmented beads from La Portella, Salina, that I have examined, did not seem to be up to the standard of the Egyptian workshops.

Frankly we just don't know. Our ignorance of the origin and subsequent history of ancient faience, man's first essay in the manufacture of a synthetic material, remains abysmal. Until some method of analysis or distinguishing feature has been discovered, any pronouncement on the origin of a faience sample, unsupported by proof of morphological identity, must be viewed with suspicion.

The Shrine of St Peter: A Review*

by Erik Sjöqvist

THE most important discoveries in Roman and Early Christian archaeology made in the last quarter of a century are those resulting from the excavations under the Basilica of St Peter in Rome. Not only have they yielded an astonishing amount of first-rate Roman grave architecture and sculpture, and the earliest Christian mosaics known so far; but they have shed surprising new light on problems related to the history, topography and archaeology of Ancient Rome, as well as on the history of the Early Church and the tradition of St Peter's stay and death in Rome. That tradition involves another series of issues on another plane but of no less importance: issues of theology, devotion and faith.

Great tribute is due to the courage of the individuals responsible for these excavations, which were spurred by some accidental discoveries made in 1939 during the work to prepare the tomb of Pope Pius XI, and carried out during the years of the Second World War. The decision to undertake a thorough, scientific investigation on this religiously vital spot was made by Pope Pius XII, and the merit for the enterprise rests ultimately with him. Those who executed the decision were four seasoned archaeologists: E. Josi, B. M. Apollonj-Ghetti, E. Kirschbaum, S. J. and A. Ferrua, S.J. Only those who have seen and studied their work can fully appreciate their professional skill, the many calculated risks they took, and their untiring patience. To carry out an extensive excavation at a depth of more than 30 feet under the floor of the greatest church in Christendom, to extricate more than a quarter million cubic feet of filling earth, to preserve a monumental burial ground with all its best finds *in situ*, and at the same time not endanger the stability of the Renaissance building or interfere with the religious ceremonies in the church above —that was the almost incredible task with which they were faced and which they successfully resolved.

In 1952 the four archaeologists presented the results of their work in a monumental publication of two folio volumes, confined in their scope to rendering an account of the observations made and the conclusions arrived at in the neuralgic centre of the excavations, the area under the papal altar and the Confessio of St Peter. Since then a stream of publications, mostly interpretative and critical articles, has run through the scholarly periodicals and the proceedings of archaeological and historical academies.

The present book is the first attempt at giving a comprehensive view of all the problems connected with the excavations and at assessing the results hitherto gained. It is written both for the specialist and the general reader. The former will find detailed descriptions of material, discussions of archaeological evidence, and a full critical apparatus, all of which to some advantage can be skipped by the latter, who instead will find a puzzling and highly interesting problem skilfully unwound and elegantly debated by the two authors.

Chapter 1 gives a concise account of the Vatican area in Antiquity, its topography and history in which the discoveries under St Peter's play so great a part. The reader is brought *in medias res* by the discussion of the important issue of the whereabouts of the Circus of Gaius and Nero, where the Apostle suffered his martyrdom, and its relationship

* *The Shrine of St Peter and the Vatican Excavations*, by Jocelyn Toynbee and John Ward-Perkins. Longmans, Green and Co., 1956. pp. xiv + 293 pp. £2 2*s*.

to the burial ground, unearthed under the basilica, where Constantine and his contemporaries thought that St Peter had been buried. The location of the circus remains still uncertain, and it may very well never be traced. We know from Pliny that there was an obelisk in this circus, presumably standing in the longitudinal axis of the arena. Until 1586 the obelisk which now is the focal point of Bernini's Piazza stood just to the south of the church and to the east of the present sacristy, where a marker in the pavement still shows the place from which Domenico Fontana moved it. If that had been the longitudinal axis of the circus and the circus had been built in solid masonry, the latter should have been traced in the excavations under the church. Such was not the case. Instead, an inscription on one of the mausolea under the church gives its own location actually as ' on the Vatican hill near the circus ' (*in Vatic* [*ano*] *ad circum*). Obviously, then, it cannot have been far away. The topographical dilemma is cautiously discussed and ends in a fair verdict: *non liquet*. Since the book went to press I have been told that a test excavation was made on the spot where the obelisk stood until its removal in 1586 and that nothing contradicts the natural assumption that it actually stood on the *spina* of the circus. The only reasonable conclusion would then seem to be that the circus either had been totally destroyed before the building of the church, perhaps yielding building material to the same, or that it had been built—like the stadium in Olympia—as a sunken area with packed earth walls without the use of masonry. The latter is the more plausible hypothesis if one considers the natural configuration of the original ground which would have readily lent itself to such a type of structure.

When Constantine built his church his architects were faced with the very same physical conditions of the terrain. What had made it an ideal ground for a sunken circus was a major obstacle to the building of a basilical church. A tremendous amount of levelling and dumping was required to obtain a horizontal building ground of sufficient size; huge substruction walls had to be sunk down to virgin soil in order to secure the stability of the superstructure; and—above all—a rich burial ground had to be desecrated and demolished during these preparatory operations. The latter was a serious matter in Rome both from a legal and a religious point of view, but even this last obstacle was obviously overcome. If one takes into consideration that all the difficulties could have been easily avoided by building the church some hundred yards farther east, one immediately realizes that there must have been some strong and compelling reason that made Constantine's builders chose the spot. What that reason was, has become clear through the excavations: in the centre of the cord of the apse of the Constantinian church there stood a small shrine in form of a modest aedicula facing a free space in the old cemetery. The aedicula was spared by the builders of the church, and formed the pivot, as it were, of the whole basilica. There can be no doubt that it was firmly believed by the Christians in Rome at the time that this was a marker of the tomb of the Apostle whose memory the church was meant to perpetuate.

So far, I think it is safe to say that all authorities are in full accordance. The divergence of opinion arises when one comes to the absolute dating of the aedicula and the assessment of the age of the Petrine tradition in Rome.

Before entering into that discussion, the authors present an excellent description of the remains of the cemetery destroyed by the builders of the church. Chapters are dedicated to its layout and chronology, to the description of three representative tombs, to the architecture and art of the mausolea, to their owners who were buried there, and to their social positions and religious beliefs. It is all good archaeological and art-historical information of great interest discussed with competence and good judgment. I would like to single out the short section on the religious beliefs of the occupants of the tombs as a

particularly brilliant piece of writing. The reader finds condensed within a few pages a graphic view of the syncretistic creeds of the average 2nd and 3rd century Romans, and their various approaches to the overwhelmingly important question of how to gain salvation and an eternal life after death. Christianity was making its way through the maze of pagan mystery religions to the final victory under Constantine, and its gradual progress is traceable in sculpture, mosaics and inscriptions found in the cemetery.

How old are these Christian manifestations and, above all, how old is the small commemorative shrine, the aedicula, which was the ultimate cause of the building of Old St Peter's? Here one enters highly controversial ground, and the authors express themselves with studied caution while arguing their interpretation and presenting their view. The date assigned to the aedicula is the decade between A.D. 160 and 170, i.e., about a century after the death of the Apostle, and so far the authors mainly follow the views of the excavators; but in so doing they contribute to the discussion with new and original arguments. The clarity of their presentation, enhanced by excellent drawings in the text, brings order into a rather confused situation, and will always remain a great contribution toward the solution of the problem.

The argumentation is necessarily technical and has to be followed with great attention in order to be correctly evaluated. What makes any reconstruction of the events leading to the building of the aedicula particularly intricate is the fact that the aedicula itself was destroyed and remodelled in subsequent periods. From the beginning it was a modest monument consisting of two superimposed niches separated horizontally by a stone slab resting on two simple colonnettes. The niches were made into a wall, the so-called Red Wall, in the foundations of which was found a third, entirely shapeless little recess containing some human bones. The dating of the aedicula is, therefore, tied to the dating of the Red Wall and to the adjacent monuments related to it. The latter consist of a small burial area, called Q, and a stepped ramp leading up to it, called the Clivus. Further, one has to take into consideration two earth burials, one of which (γ) lies partly under the Red Wall, while the other (θ) lies immediately to the east of the aedicula, at levels respectively 1·70 m. and 1·30 m. below the level of the aedicula.

The burial area Q was drained through a channel under the Clivus antedating the Clivus itself and its east limit which is the Red Wall. The drain was built by tiles carrying brick stamps referring to a period between the years 147 and 161. They provide the excavators and the present authors with one of their chronological corner-stones. Further, the authors assume that the walls, the drain and the burial area Q were all built in close connection with one another soon after the date indicated by the brick stamps, and that the aedicula is contemporary with the Red Wall. The conclusions are best summarized in their own words (on p. 159): ' That the Christian community of the mid-second century did in fact believe St Peter to be buried in approximately this spot, and that the builders of the Red Wall, in trenching for their foundations, did hit upon one end of a deeply buried grave, which was promptly identified as that of St Peter, is a hypothesis that would explain a great deal that is otherwise puzzling in the archaeological record. The proprietors of the Clivus and of Tomb Q would have been as anxious as the members of the Christian community to avoid the troublesome formalities (including an animal sacrifice) involved in moving the remains for reburial. The workmen had already carried the foundations of the wall as far as possible over, rather than through, the grave, by leaving it as an " island " of earth, on either side of which these foundations descended to a deeper level. Now, by agreement between the interested parties (if not, indeed, already by the workmen at the moment of discovery), that part of the skeleton which had already been disturbed by the initial trenching was hurriedly reburied in the same place, under the foundations of the wall;

and the original plan was modified to allow the incorporation of a funerary monument, the Aedicula, directly over what remained of the original grave.'

This is all plausible, but as the authors themselves both know and say, not proved. The tiles may have been re-used (a fairly common procedure) and the stamps indicate only that the drain was built *after* the given date, not *how* much after, still less that it was immediately after. The validity of the argument likewise depends upon the assumption that the Red Wall is a homogeneous structure. This may be doubted for several reasons. It is not rectilinear in its orientation and its northern end deviates slightly to the west. The deviation starts precisely in the niche of the aedicula. Further, the foundations of the wall rest in its south part at a level about 1 m. higher than in its north end, and, finally, its southern part is considerably thinner than its northern part. These circumstances in themselves do not prove that the Red Wall was built in two separate stages, but they allow of legitimate doubt as to the homogeneity of the structure. If it can be proved that even the Clivus has undergone two building stages, such doubts would be strengthened.

The unpretentious tombs γ and θ are supposed to have been dug into the natural slope of the hill, while a series of similar burials in the neighbourhood are obviously dug into the filling dumped between the earlier mausolea and the Red Wall. This circumstance may also have some bearings upon the chronology, and it remains to be seen if γ and θ are the first tombs on the spot, and if what the excavators call the ' fondo originario ' really is the virgin soil. Testing excavations have been going on since the book went to press, and they do not seem to uphold the assumption. But here we have to wait for new evidence before drawing any definite conclusions.

These remarks are not made in a vein of general scepticism and imply no negative attitude toward the continuity of the Petrine tradition on the spot. If the aedicula proves to be later than what the authors believe, it most probably took the place of some earlier monument there which for some reason had been totally destroyed at an earlier date. That was, after all, what later demonstrably happened to the aedicula itself. The authors themselves hold it possible that some sort of monument preceded the aedicula on the spot. Perhaps this presumed monument caused the builders of the Red Wall to change their orientation and the depth of their foundation trenches. The authors' argumentation for a continuous veneration of the site where the aedicula was built is strong and valid even if the aedicula itself is not the first monument over the Apostle's tomb.

What the shrine looked like in Constantinian times and the alterations and vicissitudes it underwent during the Middle Ages is for the first time put forward in a clear and convincing way by the authors. These chapters, as well as the Epilogue, dealing with the influence of Old St Peter's on the architecture of the West, contain an amount of original research, new ideas and profound scholarship made easily accessible to the reader thanks to the clarity of the presentation and the elegance of the style.

The authors should be congratulated on their achievement for which classical and mediaeval archaeologists, historians and art historians will remain lastingly grateful.

ANTIQUITY XXXI, 1957

Excavations at Jamestown, Virginia

Site of the First Permanent English Settlement in America

by JOHN L. COTTER

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' As in the arts and sciences the first invention is of more consequence than all the improvements afterward, so in kingdoms, the first foundation, or plantation, is of more noble dignity and merit than all that followeth.'

LORD BACON.

ON a bit of marsh-mound land cast up in the James River was planted the first permanent English settlement in America. The landing at Jamestown, 13 May (o.s.), 1607, did not represent the first attempt to found an English colony on the eastern seaboard. In 1585 an expedition under the command of Sir Richard Grenville and with Ralph Lane as Lieutenant-Governor established the ill-fated Roanoke Island colony off the coast of North Carolina. By 1590 it had vanished—to this day the fate of the ' Lost Colony ' is uncertain.

The Jamestown story is essentially one of a business enterprise—the Virginia Company of London—which invested the present-day equivalent of twenty million dollars in founding a base for the commercial development of the riches thought to lie in Virginia, then the whole known North American Atlantic coast above New Spain in Florida. The Company, chartered in 1606, brought to the New World a curiously mixed company of 105 gentlemen of few skills and others of few more, all adventurers by their own will and ambition, led on by hopes of fortune.

The story of the next fifteen years is one of almost incredible desolation, near abandonment, conflict among the settlers and with the Indians. For the first two and a half years the resourceful and energetic leadership of Captain John Smith kept the community from perishing. When he returned to England, disabled by a gunpowder explosion and perhaps under duress, the settlers starved. By the spring of 1610 nine-tenths of them had died.

In 1614 Pocahontas, the remarkable daughter of the Powhatan, chief of the confederacy of Algonquin tribes bearing his name, married John Rolfe and the ensuing eight years of peace with the Indians allowed Rolfe's improved tobacco, imported from the West Indies, to prosper the settlement. Tobacco became the sole crop of lasting market value and the currency of the land. Following the death of Pocahontas at Gravesend, England, in 1617, relations with the Indians deteriorated, and in 1622 a massacre of settlers occurred in the plantations beyond Jamestown Island which brought retaliation and the ultimate end of serious Indian menace. It also brought to the attention of the Crown the dual fact that the settlement was safer as a royal colony and as such contributed directly to the King's treasury. The Virginia Company was dissolved in 1624 and the now thriving colony continued to grow. The first representative legislative assembly in America, established at Jamestown in 1619, evolved into a pattern plainly foreshadowing independence from the mother country.

The next conspicuous event at Jamestown was Bacon's Rebellion of 1676, on which occasion the statehouse, church and the town itself were burned. Jamestown, although restored, never recovered from this blow. Always an unhealthy place to live, nestled amid marshes a few feet above tidewater and thirty miles from the great harbour of Hampton

Roads, the village was unpopular with the planters, who came there only for business and legislative purposes. Probably not over twenty to thirty houses ever were occupied at Jamestown at a single time.

After the fourth statehouse burned in 1698 the seat of government was moved to Williamsburg and the First Capitol declined rapidly. The town ceased to exist at the time of the American Revolution, 1775–81, when the sandy isthmus connecting Jamestown and the mainland was washed out, making access to the island difficult. For nearly 200 years Jamestown Island was given over to plantation cultivation, and the ruins were almost entirely levelled and forgotten.

This year, the 350th anniversary of the founding, Jamestown, as a part of Colonial National Historical Park, is portrayed as a national shrine. The isthmus has been re-established, many of the buildings which have been located by archaeological testing have been marked above ground, pictured and described. The story of the first permanent English settlement is told to many thousands of visitors monthly by means of museum displays and other interpretive devices.

Within the last decade in the United States, considerable progress has been made in the employment of archaeological techniques to secure and supplement historical documentation. Where sites of early settlements are indefinitely located or otherwise meagrely described, the trowel of the archaeologist has been producing material evidence with which to recreate times, places and events. Notable among these efforts is the exploration of Jamestown Island, Virginia by the National Park Service, United States Department of the Interior.

In view of the approaching 350th anniversary of the founding of the first permanent English settlement in North America, 13 May (o.s.), 1607, a twenty-two-year-campaign of intermittent excavation in the Jamestown area was accelerated in 1954–56 so that the locations of known buildings might be marked on the surface, and on-site displays and museum exhibits could be developed. The result of these systematic searches for tangible evidence has been, in effect, a rediscovery of a site heretofore only generally defined by extant historical records and obscured by upwards of 200 years of physical neglect and romantic musings.

It is a curious fact that relatively little scholarship of anthropological or historical value has been devoted to Jamestown, and of this only a fraction has been published. Despite the fact that here in the early accounts of John Smith and William Strachey we have revealing and significant glimpses of an aboriginal culture as it emerged from the prehistoric and archaeological past, only a few ethnologists, notably the late Dr Frank G. Speck of the University of Pennsylvania, have endeavoured to utilize and develop what is recorded of the Virginia Algonquins. Historians have dealt no more generously with the Jamestown story, and to-day the fundamental references, aside from historical source material, remain Lyon G. Tyler's *The Cradle of the Republic* (1906), Philip A. Bruce's *Economic History of Virginia in the Seventeenth Century*, published in 1895, and the older *Genesis of The United States* by Alexander Brown.[1] Even fiction concerning the James-

[1] This is not to minimize the importance of useful preliminary observations and source materials for future studies of Jamestown, such as the *Bibliography of Virginia* (Richmond, Va., 1916) and Virginia Historical Index (Roanoke, Va., 1934–36), by Earl G. Swem; *The Site of Old "James Towne"* 1607–1698 (Richmond, Va., 1930), by Samuel H. Yonge; and the painstaking studies of architectural beginnings at Jamestown by Henry Chandlee Forman: *Jamestown and St Mary's* (Baltimore, Me., 1938) and *The Architecture of The Old South* (Cambridge, Mass., 1948). Over a period of more than twenty years National Park Service historians and archaeologists

town story has been remarkably sparse and meritless. To-day Jamestown is known to most people in the United States—if it is known at all—through the tired clichés of the general academic history book and the encyclopaedias. In order to make the Jamestown of 1607 to 1700 live again it is necessary to turn directly to the original documentary sources and to the wealth of archaeological data now gathered by the National Park Service.

The problems faced by archaeologists at Jamestown were many. The most important ones involved erosion of the western and southern shores of the island, the lack of specific knowledge of town layout at various periods of 17th-century development, and the attendant need to determine the locations of houses and other features. Finally, the study of artifacts had to be undertaken as a matter of basic research to provide not only time markers and means of identifying the uses and character of structures, but also the means of demonstrating the details of trade, local arts and crafts, and of throwing light upon the economy at large, including foods, general standard of living—in fact, all facets of colonial life lacking adequate illumination from historical sources.

Thus, the following steps toward resolving these archaeological problems may be stated briefly:

(*a*) To provide a summary of artifact types from Jamestown which will be a guide to archaeologists and historians investigating this and other 17th-century sites in the British colonial areas.

(*b*) To inform students of colonial history and economics, and more specifically those specializing in buildings, artifacts and crafts, of the need for further basic research in the sources of raw materials, their use, and the development of designs in architecture, wood and leather work, glass, iron, pewter, etc. In this regard, it has proved impossible to carry out at the present stage of research a comprehensive analysis of most classes of artifacts for the simple reason that what is known about them relates mainly to specific objects of art with known dates rather than to classes of objects, such as the several pottery wares, their history, physical properties, designs and manufacture characteristics and specific use.

(*c*) To announce to specialists and students of 17th century American colonial arts and crafts the availability of the Jamestown collection for further and more detailed—and very necessary—study.

With these objectives in mind we proceed to the over-all summary of archaeological findings.

Forty-four per cent. of the 50 acres estimated to comprise the settlement area at its maximum extent has now been explored by the National Park Service since 1934 (PLATE V). This work resulted in the discovery of 140 structures of varying importance, including 65 houses, at least two known public buildings and a church, and 24 wells. Locations of 96 ditches served to indicate possible boundary markings for tracts of land. Among the hundreds of miscellaneous features were six roads, a major refuse pit, an ice pit and a number of enigmatic trough or moat areas possibly connected with a fortification erected in the second half of the 17th century. In the course of excavations, approximately half a million artifacts were unearthed to provide the most extensive single collection of 17th-century English colonial objects in America.

A discovery of considerable significance was made during re-excavation of a portion of the Third and Fourth Statehouse foundations preparatory to making measured draw-

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have produced several general and topical booklets devoted to interpreting Jamestown for the visiting public, together with a number of special studies and reports, a few of which have been published in professional quarterlies and trade magazines the remainder being on file at Colonial National Historical Park, Yorktown, Virginia.

ings. These structures are included in a row of joined houses known as the Ludwell Third and Fourth Statehouse group, the foundations of which were partially uncovered and the top portions stabilized in 1903 by Col. Samuel H. Yonge, an officer of the U.S. Army Corps of Engineers who encountered the walls while preparing the ground for a sea wall. Apparently the architects of the Ludwell House and of the successive Statehouses of the latter 1600's had not been aware that they were building above a cemetery—to have disturbed such a location knowingly would have been quite out of keeping with sentiment and custom. Likewise, Colonel Yonge did not explore sufficiently beneath the foundations to discover the graves. In 1955, however, the walls were exposed to the basal course and the undisturbed clay in which it was set, and it was then that the forgotten graves were revealed. It is now estimated that the graveyard, part of which has been destroyed by erosion of the James River, once held as many as 300 burials, part or most of which may have been laid down in the Starving Time of the winter of 1609–10. Significantly, the burials appear to have lacked coffins for the most part, and some were evidently tumbled into the earth hastily and carelessly. No artifacts were found with the ten graves which were examined in detail.

Near Pitch and Tar Swamp was found a closely integrated cluster of industrial features including an ironworking pit, two pottery kilns, the brick foundation of a workshop (PLATE VIII, A) with three brick fireboxes and a large fireplace, and a pit roughly 40 feet square and 5 feet deep which may have been a source of pottery clay before its ultimate use as a dumping place for refuse. The exact use of the shop is unknown, but it is possible that distilling, drug preparation, baking or ceramic drying and finishing could have been done there.

Just to the south of Pitch and Tar Swamp and this little ' industrial ' area, a long building 167 by 21 feet was discovered. This multiple house was divided into 4 parts by partition walls, as indicated in the brick foundations uncovered just below the plowline. However, unlike the deep and narrow urban ' row house ' of the period in England, this communal structure was composed of apartments arranged so that their long dimension, about 40 feet for each, coincided with the long axis of the whole structure. At Jamestown multiple houses could spread out laterally most logically, since space was of no great consideration. The Ludwell Third and Fourth Statehouse group of joined houses, on the ' third ridge ' overlying the forgotten cemetery, is another example of laterally-expanded apartments.

Further down river, near the shore at Orchard Run, a brick kiln was discovered in a small, rectangular pit. Detritus within the pit fill was characteristically first-quarter 17th century, and it may be assumed that this was one of the earliest of Jamestown brick kilns.

Three other single houses of considerable interest were uncovered during the past two years, but their identity, like almost every other Jamestown structure except the church and the Ludwell Third and Fourth Statehouse group, is unknown.

The Artifacts. The most complex artifact at Jamestown is the house, and the story of housing here should beckon students of architecture for many years to come. Simpler unitary artifacts by the thousands all contribute to the 17th-century scene in Virginia, and many of them demand basic research which will not be forthcoming for a long time. In fact, it is necessary to equip oneself with a truly formidable amount of technical information simply in order to excavate and describe the features and objects which have been buried at Jamestown.

Ceramics. Typically, the archaeologist seeks out ceramic types as sensitive indicators of time and cultural association. At Jamestown he has not been disappointed. From the first three boatloads of settlers in 1607, who undoubtedly had with them objects of earthen-

ware and stoneware, to the 20th-century picnicker with his plastic dishes, the story is continuous. But the 17th-century artifacts claim most attention since by the end of that century Jamestown had ceased to function as a capital and soon thereafter lost its identity as a community, its ruined foundations and their ceramic refuse fortunately becoming sealed off from disturbance for 200 years.

Seventeenth-century earthenwares at Jamestown are represented by these principal types (PLATE VI): Lead-glazed utility vessels locally made, lead-glazed imported utility wares from north Devon, rare sgraffito from Barnstaple and other English slipwares, tin-enamelled Dutch and English delft, and some examples of majolica from Spain and Portugal. Stonewares are present in quantity, mostly from the Rhineland, and some English: blue on grey, brown mottled (bartmanns, cups and jugs) and, ultimately, white. There is a limited but interesting representation of oriental porcelain. Most sensitive of all ceramics is the clay tobacco pipe, and here is a study worth much patient research, recording and analysing significant changes of form, capacity of bowl, length of stem, aperture of stem hole. Subtly, ceramic types here progress and vary to match the dates of buildings and other features—if the total evidence is used with proper caution and perception. Once into the 18th century, Jamestown planters continued the deposition of ceramic artifacts, and their occupation can be traced in the sherds in the ground as well as in the archives.

Glassware. Of locally-made glassware nothing is known except that glass was actually made at a known location on adjacent Glasshouse Point, across the isthmus from Jamestown, as early as 1608. There, only frit and cullet traces and a few drops and snips from the limited glass trials have been collected. However, of glass which was brought into Jamestown there is a fine representation, and the ubiquitous Holland gin bottle dating from the first part of the century onward is much in evidence. After 1640 wine bottles became increasingly numerous, and at the close of the 1600's the bottle seal was popular. Styles of wine bottles changed sensitively at Jamestown, and, again, a valuable time gauge is provided for features in which they occur. Venetian type wine glasses, while rare, are well represented, and that utmost rarity, stems bearing the seal of Ravenscroft are present—four of them (only a few are preserved to-day in England).

Iron. The only comprehensive survey of iron at Jamestown is the excellent ' The Story of Iron at Jamestown ' by curator J. Paul Hudson in *The Iron Worker* (Summer 1956 issue, published by Lynchburg Foundry Co., Lynchburg, Virginia). This study, in summarizing the tools, farm implements, weapons, kitchen utensils, fireplace equipment, building hardware, equestrian trappings and general household accessories, notes: ' The iron collection (at Jamestown) is unique in many respects and is probably the largest assemblage of English 17th century iron objects in existence.'

Special note should be made of the discovery in recent archaeological explorations of evidence that bog iron was smelted in small pit ovens early in the occupation of Jamestown. Near Pitch and Tar Swamp in 1955 a circular pit was found to contain, beside assorted débris, definite evidence of charcoal in association with burned oyster shell, iron ore and pieces of smelted iron and slag. This may well be the earliest recognized iron smelting effort in North America.

Another discovery in 1955 revealed traces of a forge site or smithery dating from the first quarter of the 17th century. Nearly obliterated by a Confederate fort erected in the 1860's, the bottom of a shallow pit yielded slag, bar iron, pieces of weapons, tool fragments and several partially completed iron objects, including an iron handle, chisels and nails. Among the weapons were snaphaunce lockplates, wheel locks, basket hilts from broadswords, a guard from a swept-hilt rapier, a portion of a forked musket rest and knife fragments.

The importance of iron hardware furnishings in house remains has presented a challenge as yet not met by historical archaeologists. With adequate research the date and other identifying information regarding construction, decoration and furnishing of houses can be derived from nails, spikes, staples, locks, keys, hinges, casements, pintles, shutter fixtures, bolts, hasps, latches, door pulls, gutter supports, wall anchors and assorted adornments.

To sum up:—The National Park Service is now ready to make available a large and significant collection of 17th-century artifacts from Jamestown for detailed study by qualified researchers in many lines of archaeological and historical research. During and after the 350th Anniversary Celebration a selected portion of the collection will be exhibited in new museum facilities and the entire island will be opened to visitation. A general archaeological report listing major finds at Jamestown since 1934 is now in preparation. A comprehensive pictorial booklet on artifacts recovered by archaeological investigation and a summary statement on major structures will be published by the National Park Service in 1957.

Four Spanish Hill-Forts

by A. H. A. Hogg

IT has long been recognized that during the latter part of the 1st millennium B.C., as in other periods, there was contact between Spain and western Britain,[1] and it has been claimed that there are structural resemblances between hill-forts in those areas. But although an excellent account of the Iron Age in northern Spain has been available for some time to English readers,[2] it deals almost exclusively with the portable relics, and gives very little information about the forts themselves. Moreover, the original publications which deal with these remains are very scarce in Britain.[3] It therefore seems worth while to give some account of four which the writer was able to visit during 1954. They were selected primarily because their defences incorporated *chevaux-de-frise*, which seem generally to be rare outside Spain, but which occur on two sites in Wales, and elsewhere in Britain.

The places visited were two large *castros* near Avila, the Castro de Miranda and Las Cogotas; and two small forts near Soria, the Castro de las Espinillas near Valdeavellano and Castillejo at Hinojosa de la Sierra. All have been fairly adequately described, but not all the reports are easily accessible in this country. Apart from a few sketched additions the plans given here are based on those in the original accounts. The writer's visits were brief, and no fresh survey was attempted.

To place the sites in their proper perspective, a short account must be given of other types of fortress which were in use in northern Spain at about the same time. This is based, not on personal investigation, but merely on the published material available in this country. It can do no more than indicate in the most general way the complexity of the problem (MAP, FIG. 1).

In the south and east of the peninsula, the larger settlements usually formed fairly civilized towns, with their fortified areas occupied by houses closely set along paved streets, although Mr Hemp has described three forts of more primitive type which exist about 60 km. south of Valencia.[4] But in the north and west most of the hill-forts are generally similar to those in Britain.

The four forts described here all include a belt of *chevaux-de-frise* as part of their defences; sites using this type of fortification seem to be confined to a belt extending across central Spain and into Portugal, but not reaching as far north as the coast. There is little information as to the character of the defences used in the north-east, but immediately north of the *chevaux-de-frise* area a single site, Monte Bernorio,[5] closely (though perhaps only superficially) resembles a normal Wessex hill-fort with two earthen ramparts. Round much of the north and west coast extends the Citania culture; the *castros* associated with it range from small fortified villages of half a dozen houses as at Borneiro and Baroña,[6]

[1] E. T. Leeds, *Archaeologia*, vol. 76 (1926–7), pp. 227–235.

[2] P. Bosch-Gimpera, 'Two Celtic Waves in Spain'. Sir John Rhys Memorial Lecture, British Academy, 1939. (*Proc. Brit. Acad. xxvi.*)

[3] The best collection of publications appears to be in the Ashmolean library in Oxford.

[4] W. J. Hemp, 'Three Hill Forts in Eastern Spain'. ANTIQUITY, III (1929), p. 188.

[5] J. Cabré, Acrópoli . . . del Monte Bernorio, *Arte Español*, 1920. For air-photograph see J. Martinez Santa-Olalla, *Esquema Paletnologico de la Peninsula Hispanica* (Madrid, 1928), pl. LIII.

[6] S. Gonzalez Garcia-Paz, *Bol. Univ. Santiago*. 1934.

through towns of irregularly scattered buildings such as Coaña, Pendia, Troña,[7] and Sabroso, to cities like Citânia [8] with their dwellings built along paved streets. Many of them show a close association of circular buildings with others which are rectangular, usually with rounded corners.[9]

This type of *castro* does not cover the whole of the Galician promontory, the north-west of which is occupied by numerous small oval forts with one or two earthen ramparts.[10] It will be evident from this incomplete summary that the problems set by the

Fig. 1

Spanish forts are complex, and it is as misleading to refer to a ' *Castro* culture ' as it would be to speak of a ' Hill-fort culture ' in Britain.

Returning to the area in which *chevaux-de-frise* occur, the fortresses fall into at least two groups. At the eastern end of the belt, north of Soria, there occur fairly numerous small forts, of which those at Valdeavellanos and Hinojosa (fig. 2) are typical. Close to these on the south are other small stone-walled forts without *chevaux-de-frise* and containing rectangular buildings.[11] Near-by, also, to the south-east, is the town of Numantia, which at latest by 133 B.C. had a gridiron layout of paved streets.

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[7] Coaña and Pendia: *Archivo Español de Arqueologia*, 1942, pp. 216, 288; Troña: *Memorias de la Junta sup. de Excavaciones*, 115, 1950; Sabroso: see ref. 8 below.

[8] M. Cardozo, *Citânia e Sabroso*, 2nd ed., Guimaraes, 1938.

[9] A similar association, which is not common in Britain, occurs in Anglesey and Caernarvonshire (see R.C.A.M. Inventories *passim*). To judge from published accounts, constructional details which are characteristic of the Spanish sites also appear, for example, at the 3rd–4th century A.D. hut group at Din Lligwy. But until both areas have been examined by an archaeologist with this possibility in mind, the suggestion that there was a transfer of population organized by the Romans must remain no more than a hypothesis.

[10] See, for example, F. Maciñeira Pardo de Lama, *Bol. Acad. Gallega*, Año xxx, no. 259.

[11] B. Taracena Aguirre, *Soria* (Carta Arq. de España), Madrid, 1941. E.g. Ocenilla, p. 122.

The large forts of the type of Las Cogotas and Castro de Miranda are found, in small numbers, to the north and west of Avila. Further west, *chevaux-de-frise* are said to exist in Portugal,[12] but descriptions are lacking.

Castro de las Espinillas [13] lies on a rocky and wooded hillside above the *eremita* of that name, a short distance north of Valdeavellano (22 km. N.N.W. of Soria). On the south side the ground falls away in a cliff about 15 ft. high; outside the rampart to the north the hill rises fairly rapidly, and the enclosure can be overlooked from higher ground.

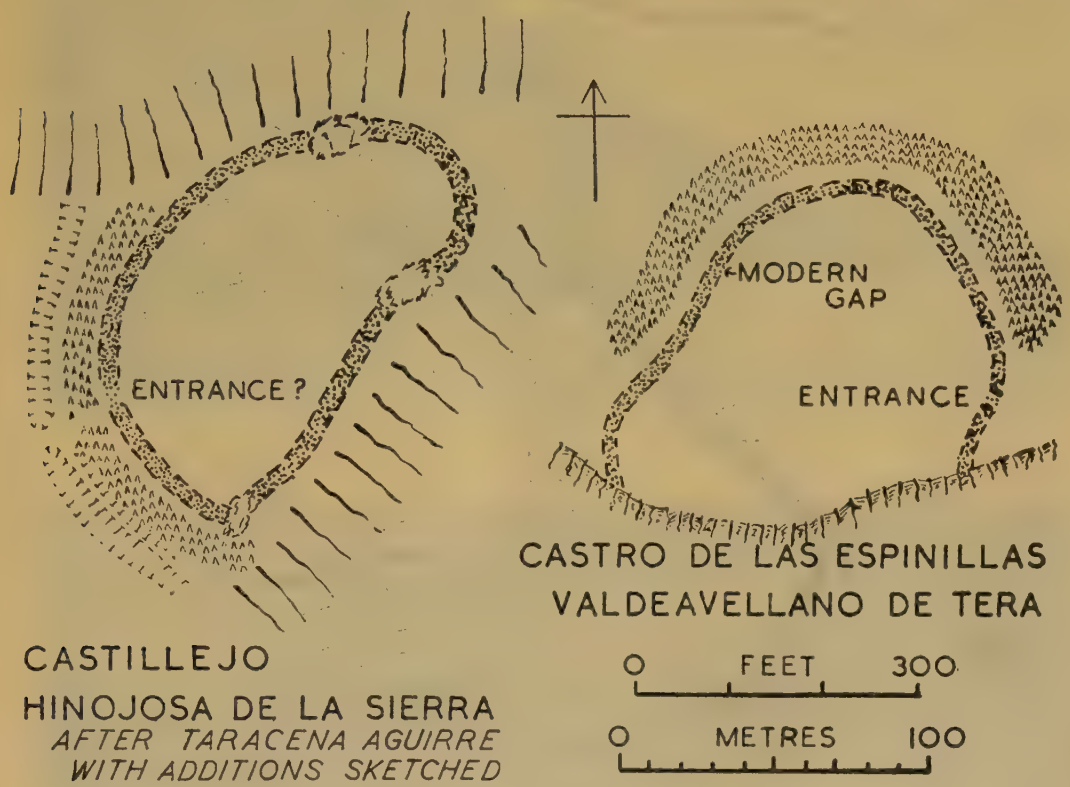


Fig. 2

Castillejo [14] stands about 1 km. east of Hinojosa de la Sierra (16 km. N.W. of Soria), on a summit forming the end of a spur of Sierra Carcaña. The defences of both fortresses now appear as broad banks of rubble without any visible facing, but at las Espinillas excavation showed that the wall was originally of rubble faced with laid stone, 12 to 14 ft. wide at the base, with a steep batter to each face. The remains still stood to about 6 ft., and were estimated to have been about twice that originally. Aguirre's plans show no entrance at either site, but at las Espinillas a short length of facing is visible lying transversely to the

[12] M. Cardozo, *Archivo Español de Arqueologia*, xx (1947), p. 262.

[13] Aguirre, *Soria*. p. 166.

[14] Aguirre, *Soria*. p. 85. The fort is known locally as Castillejo, not Castillo as stated in this reference.

line of wall, probably indicating the position of a gateway. At Castillejo, the site of the entrance can be inferred from the presence of a clear track through the *chevaux-de-frise*.

At both forts this additional defence is formed by a broad belt closely set with pointed stones projecting 6 to 18 in. above ground level. At Castillejo this zone is bounded on its outer side by a shallow ditch.

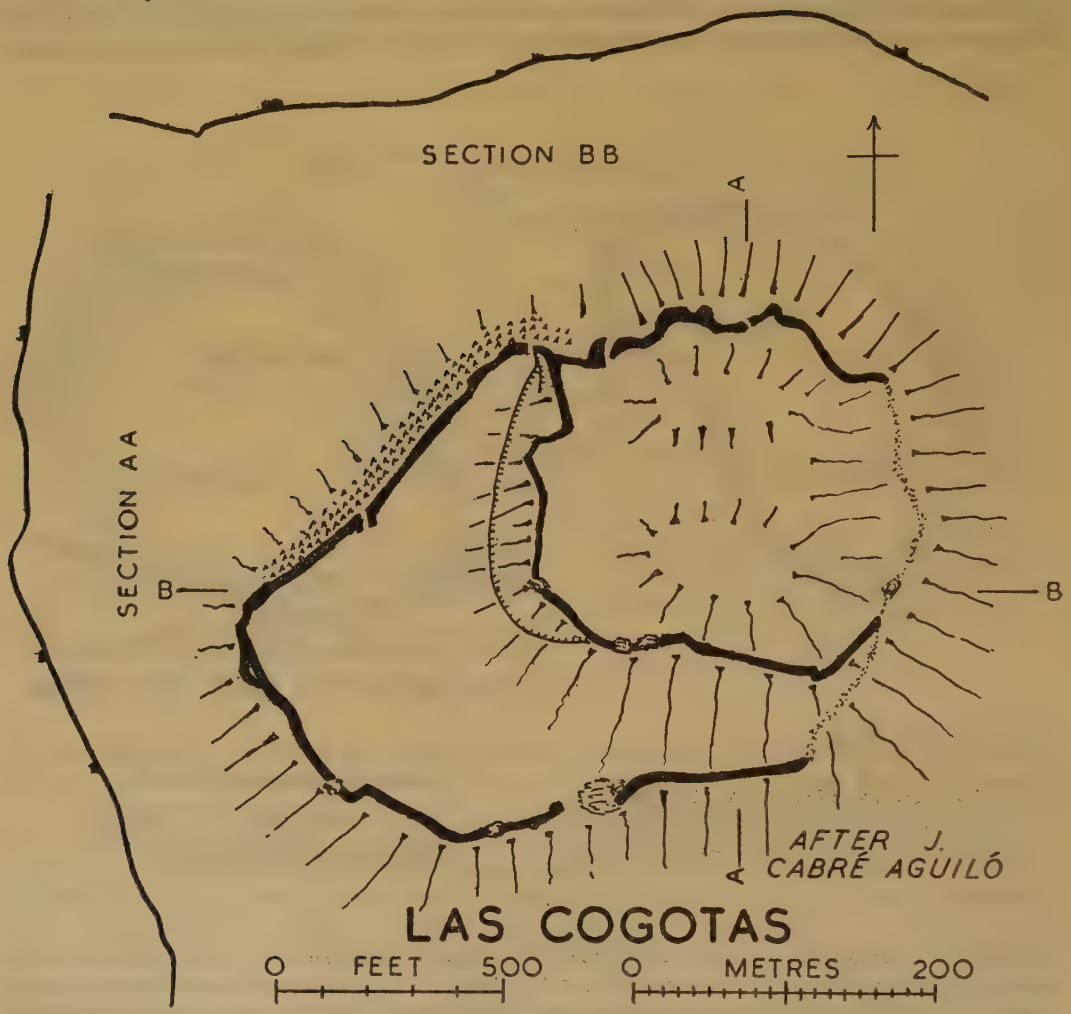


FIG. 3

No foundations are now visible in either enclosure. Both, on excavation, have produced plain coarse pottery; they are assigned by Aguirre to the 6th to 4th centuries B.C.

Las Cogotas [15] (FIG. 3) occupies a bare, rocky hill about 8 km. north of Avila, on the west of the Rio Adoja. It comprises two large enclosures, apparently of one period. In

[15] J. Cabré Aguiló, *Mem. de la Junta sup. de Excavationes y Antiguedade*, 110 (Madrid, 1929–30). Cemetery: no. 120 (1932). The drawn scale on the general plan seems, from comparison with the detail plans, to represent 100 m., not 50 m. as there shown.

PLATE I

a. SITE OF THE LATE BRONZE AGE VILLAGE OF LA PORTELLA SALINA, AEOLIAN ISLANDS

b. LA PORTELLA : HUT F (ON RIGHT), F1 (ON LEFT) ; IN THE HOLE IN F WERE FOUND IMPORTED MYCENAEAN POTSHERDS (PLATE III*b*) AND A BEAD NECKLACE (PLATE IV*b*)

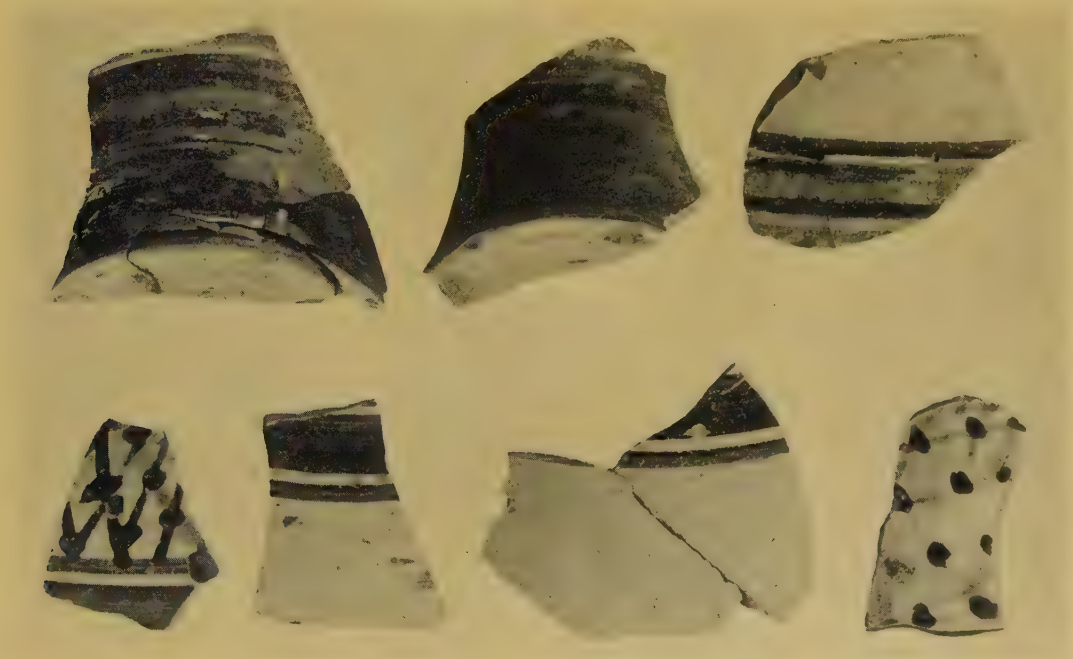
PLATE II

a LA PORTELLA: HUT C, SHOWING BROKEN PITHOI (WATER-JARS) THAT STOOD AGAINST THE WALL

b. HUT H WELL-PRESERVED RIVETMENT-WALL ON LEFT, THRESHOLD SLABS

PLATE III

a. LA PORTELLA : TYPICAL PANAREAN VESSELS, INDICATING A CLOSE RELATIONSHIP WITH THE THAPSOS CULTURE OF SICILY



b. MYCENAEAN POTSHERDS FROM HUT F

a. LA PORTELLA : SIX-HANDLED PITHOS OF THE TYPE FOUND IN EVERY HUT: HEIGHT, 4 FEET, 5½ INCHES (1·36 m.)

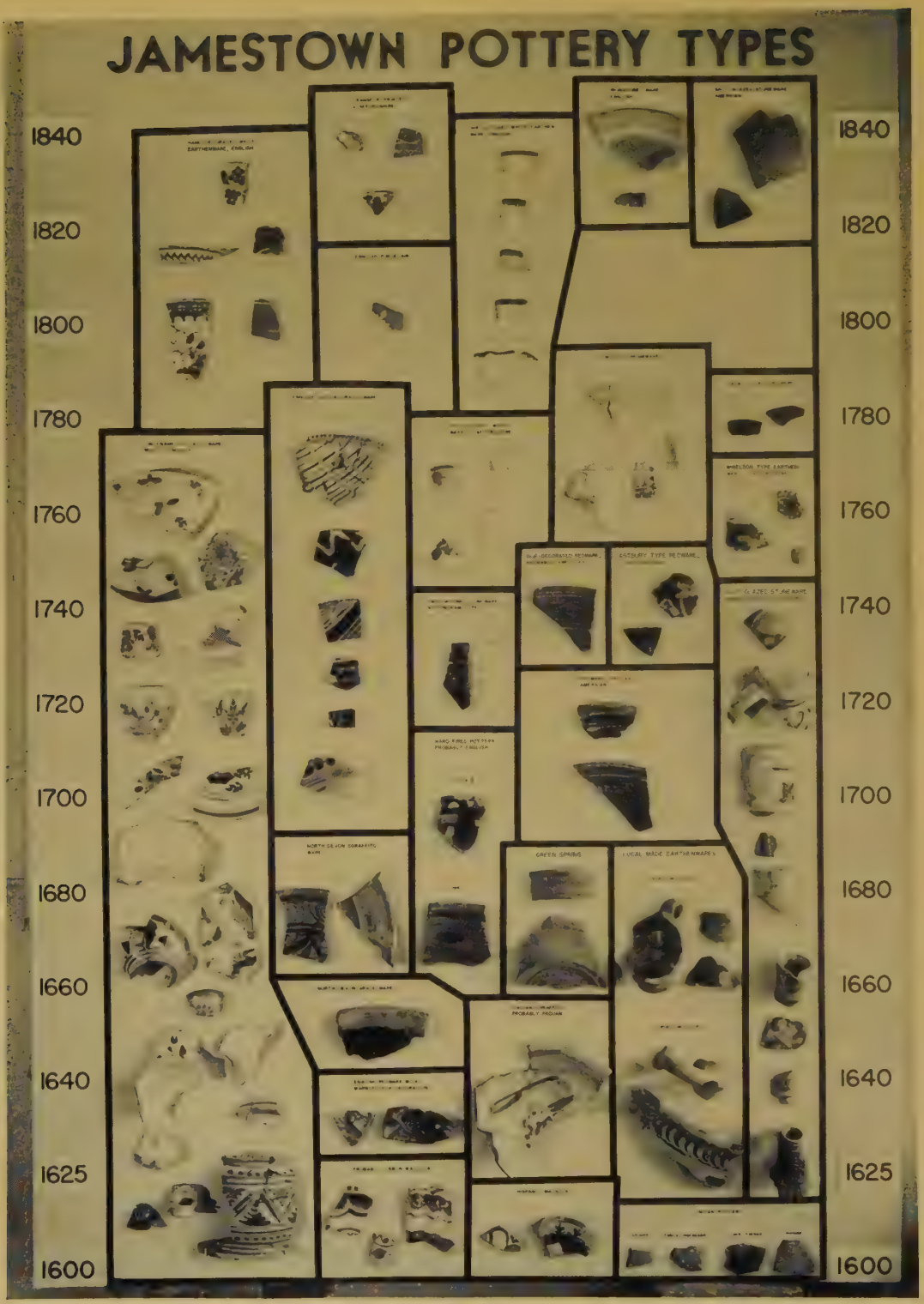
b. BEAD NECKLACE FOUND WITH MYCENAEAN POTSHERDS (PLATE III*b*) IN HUT F : IN THE MIDDLE LOOP ARE SEGMENTED FAIENCE BEADS

PLATE V

a. PLAN OF WESTERN PART OF JAMESTOWN, VIRGINIA: GRID-LINES RUN NORTH-SOUTH, 100 FEET APART

b. CONJECTURAL RESTORATION, BASED ON EXCAVATION

(see pp. 19 ff.)



JAMESTOWN POTTERY TYPES
(see p. 23)

JAMESTOWN : THE LARGEST HOUSE UNCOVERED, NEAR THE SECOND STATE HOUSE : IN FOREGROUND, A 1200 POUND PILE-DRIVING IRON INGOT

PLATE VIII

a. JAMESTOWN: 17TH CENTURY WORKSHOP
(see p. 22)

b. JARMO, IRAQ: ANTERIOR VIEW OF PAIR OF HORN-CORES OF DOMESTIC GOAT, PLACED IN POSITION AS FOUND
(see p. 38)

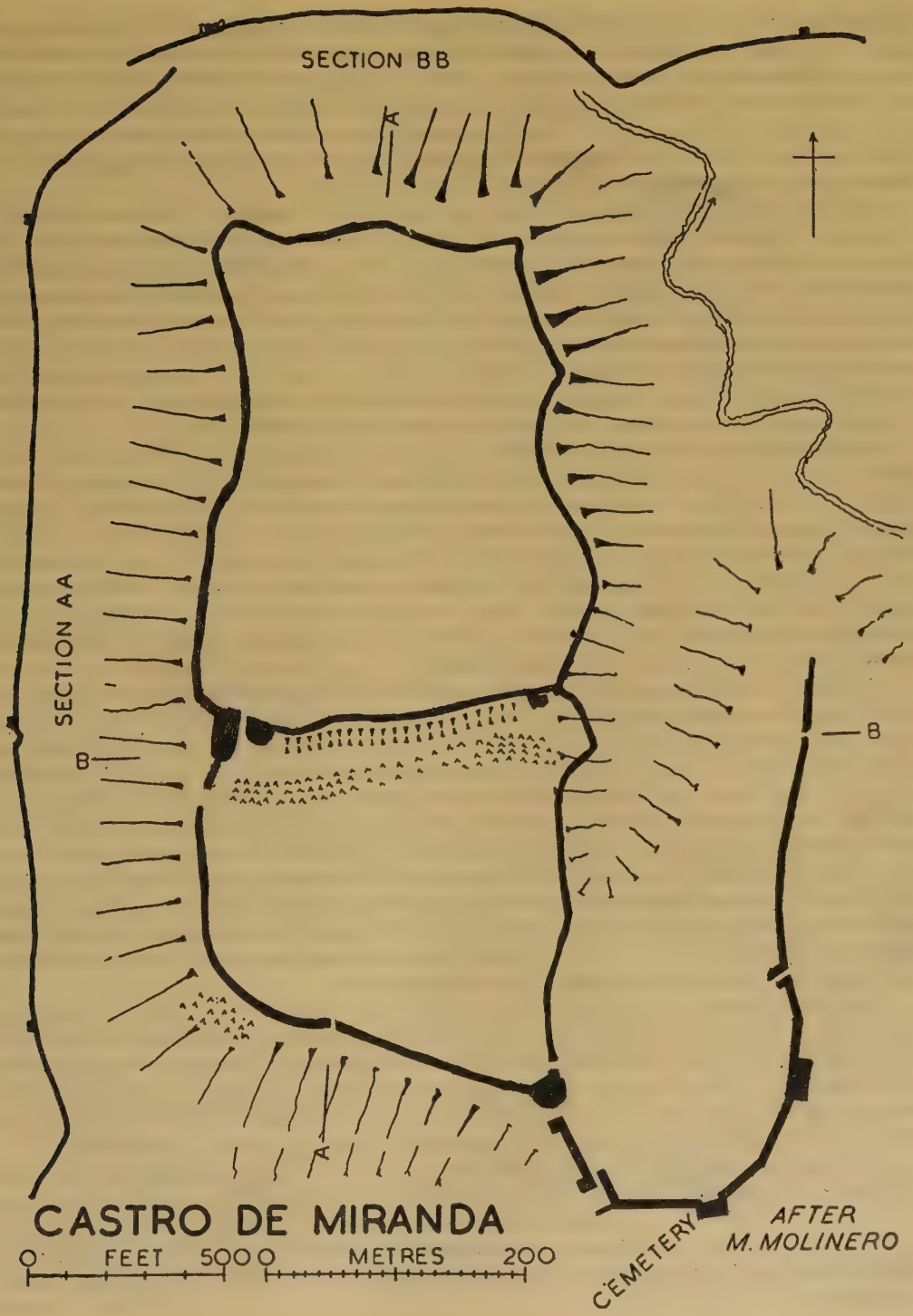

SECTION B B
SECTION A A
A
B
B
A
CASTRO DE MIRANDA
0 FEET 500 0 METRES 200
CEMETERY
AFTER
M. MOLINERO

Fig. 4

both the ground is covered with potsherds, but the lower, western, part contains no visible foundations, and was probably intended for herds. In the upper ' acropolis ' several large rectangular houses have been excavated. They are generally scattered about at random, but near the north gate they are set close together and parallel, with their ends formed by the inner face of the rampart. They have massive walls faced with large blocks, now standing 1 to 2 ft. high. Their dimensions vary from about 30 by 15 ft. to nearly twice those figures. Most of them contain a large rotary quern.

The ramparts are of earthy rubble faced with laid masonry. They vary greatly in thickness. Those of the ' acropolis ' are laid out very irregularly, apparently to form salients from which to command the intervening sections; the wall is further strengthened by occasional rounded bastions of slight projection. The gates are also strengthened by similar bastions, with the exception of the north-west gate of the lower enclosure which has a very short asymmetrical inturn. Along this side of the lower enclosure, which is the weakest part of the site, is a band of *chevaux-de-frise*. Outside the main north gate there formerly stood a *verraco*, the stone figure of a nondescript animal, probably an ox or a boar. A short distance further away was a large and rich cremation cemetery.

Castro de Miranda [16] (FIG. 4) stands on a wooded hill just beyond the edge of cultivation, about $2\frac{1}{2}$ k.m north of Chamartin de la Sierra (22 km. W.N.W. of Avila). It comprises three very large enclosures, the outermost incomplete. They probably indicate three successive enlargements of the fortress. Potsherds are as common as at Las Cogotas, but the depth of soil is greater, and three house sites only, in the north enclosure, have been partly excavated. These seem similar to those at Las Cogotas, but are smaller and less regular, with slighter walls. Small cairns, similar to those in the cemetery mentioned below, are scattered over the whole of the enclosure, as also are low circular ditched mounds which seem to be the work of charcoal-burners.

The north, or innermost, enclosure is bounded on all sides except the south by a wall now reduced to a grassy bank of no great size, which follows the top of a steep natural slope. On the south, where its line crosses the flat top of the hill, the rampart forms a high grass-grown bank, with a ditch to the south; beyond the ditch is a band of *chevaux-de-frise*. The bank seems to have been formed originally of earth or earthy rubble revetted with laid dry masonry. There is a gateway at each end of this south wall. That on the west is strengthened by large projecting bastions. To the writer it appears that the east gateway had originally a bastion on the east only. The west bastion seems to have been added, since the upper part at least of the rampart facing passes behind it. Also, the gateway has been blocked, perhaps at the same time; but certainly after the east side of the gate passage had fallen into ruin. The excavator, however, considered that the evidence showed that the gateway had been reduced to a narrow passage.

The second enclosure is bounded by a similar wall, with a short band of *chevaux-de-frise* on the south-west. Superficially, it seems to be structurally later than the wall of the north enclosure, but the junctions have not been excavated. There is a single gateway, strengthened by a large tower at the south-east apex of the enclosure. The tower has a narrow platform round its outer edge, with the main body of the structure rising to a higher level; this arrangement was presumably to accommodate two ranks of defenders.

The wall of the third, or outermost, enclosure is of an entirely different character. It is set out in straight lengths, and is strengthened by slightly projecting bastions of

[16] J. Cabré Aguiló, *Acta Arqueologica Hispanica*, v (Madrid, 1950). The plan drawn to a scale of 1/2500 by M. Molinero has been reproduced there to a scale of about 1/5100; it has no drawn scale.

rectangular plan.[17] It is 15 ft. wide, faced on both sides with large blocks and orthostats, with a fill of earthy rubble. The work, however, seems to have been unfinished. On the north, it ends without reaching either an earlier wall or a natural obstacle, and the outer facing continues some distance beyond the inner; and as noted below the outer wall of the main gate seems never to have been filled.

There are three gateways. The most northerly is a simple gap. That near the middle of the east side is set obliquely to the rampart, with asymmetrical inturns extending about 30 ft. within the line of the wall. The south gateway is more complex. The main line of wall ends before reaching the corner of the second enclosure, and the defence is completed by an outer section of walling, strengthened by two rectangular towers and set parallel to the main line, leaving an entrance passage between it and the outer section. Direct approach to this passage is hindered by a narrow wall set at right angles to the main wall. The gateway has been excavated and conservatively restored by replacing or re-erecting fallen or leaning stones, and it is now a very impressive structure; its walls are faced with large orthostats about 6 ft. high, of fairly uniform size, with laid masonry above. The outer section originally consisted of facing only, but has been filled with earth for preservation.

A rich cemetery of cremations under small round cairns has been excavated south and east of this gateway, one grave being found underneath the outer wall. A *verraco*, probably from here, stands in the village of Chamartin.

The sherds which lie scattered so profusely over Las Cogotas and Castro de Miranda are of hard plain wheel-turned ware, apparently of Cogotas III type.[18] Small pieces of similar pot can be found in the material forming the body of the ramparts at both sites, but no sections seem to have been cut to examine the interior of the walls. It would seem, therefore, that with the exception of the latest wall at Castro de Miranda the present plans of both these forts can be assigned to the Cogotas III culture. This is ascribed by Bosch-Gimpera to the southern advance of the *Vaccaei* in the 3rd century B.C.[19] Since, however, the area in which *chevaux-de-frise* were used is not coterminous with that occupied by the *Vaccaei*, and indeed the forts near Soria are assigned to the *Pelendones* who belong to an earlier wave of Celts, it seems likely that this element of fortification was taken over from earlier inhabitants of the area.

Outside Spain, recorded examples of *chevaux-de-frise* seem to be limited to the British Islands; Dun Aengus and Dubh-Chathair in the Aran Islands;[20] West Cademuir, and possibly also Kaimes Hill and the Fell of Barhullion in Scotland;[21] Craig Gwrtheyrn in north Carmarthenshire;[22] and Pen-y-gaer at Llanbedr-y-Cenin in Caernarvonshire.[23]

Pen-y-gaer is of particular interest. It is an oval enclosure. 700 ft by 400 ft., surrounded by the ruins of a strong stone wall. Outside this, on the north-west, is a second wall, which merges on the south into a revetted earthen bank, beyond which on the south

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[17] The site at Mongo described by Hemp (ANTIQUITY, III, pp. 191–3) seems to have rather similar bastions.

[18] As described by Bosch-Gimpera, ' Two Celtic Waves ' p. 62.

[19] *Ibid.*, p. 63.

[20] R. A. S. Macalister, *Ireland in Pre-Celtic Times*, pp. 269, 275.

[21] I am indebted to Mr R. W. Feachem for information concerning the Scottish sites. Kaimes Hill: *Midlothian Inventory*, no. 216; Barhullion: *Wigtown Inventory*, no. 7. The *chevaux-de-frise* recorded at Dreva are the remains of hut-circles.

[22] W. Gardiner, *Arch. Camb.*, 1932, pp. 144–50.

[23] H. H. Hughes and W. Gardner, *Arch. Camb.*, 1906, pp. 241–267; *Caernarvonshire Inventory*, I, no. 315.

only is a further similar bank. On the north-east the hill is very steep and there is no defence beyond the inner wall. On the west outside the entrance, and on the south, are areas covered with *chevaux-de-frise*. The southern area is bounded by a small ditch, exactly as at Hinojosa, and north of this area *chevaux-de-frise* were also found between the earthen banks.[24] Within the enclosure are twelve round huts, and eight more lie between the inner and middle walls. Some have been excavated, but produced no dating evidence. Traces of rectangular structures occur against the wall within the gateway, but are probably recent.

The fort is certainly of at least two periods of construction. In the opinion of the writer the first-period structure comprised the *chevaux-de-frise* and the inner stone wall, perhaps also the outer; the revetted banks are later, having been built over the *chevaux-de-frise* in places. The round huts are probably of the later period. This interpretation needs to be tested by excavation, but, if correct, it carries the *chevaux-de-frise* back at least to the beginning of the 1st century B.C., probably earlier.

It is, of course, possible that this rare method of defence could have been invented independently at about the same time both in Spain and Britain,[25] but considering the known contact between the countries and the close similarity in detail between Pen-y-gaer and Hinojosa, it would seem almost certain that the British examples were directly derived from Spain. But with the exception of the Aran Island forts and the Fell of Barhullion near the Wigtownshire coast all the British sites are some distance inland, and could not have been founded by invaders entering hostile territory, unless they arrived in some force, There is, however, nothing improbable in the idea that small bodies of refugees, escaping from some disaster in Spain, might reach Britain and be accepted among the inhabitants. This assumption would explain the rarity and random location of forts with *chevaux-de-frise*, and the absence from them either of any typically Spanish pottery or, so far as is known at present, of rectangular houses. Indeed, if *chevaux-de-frise* are in fact almost confined to Spain and Britain, no other simple explanation would seem to fit the facts.

There are two events in Spanish history with which this postulated exodus of refugees might be associated: the wars of Hannibal at the end of the 3rd century B.C., and the struggle culminating in the destruction of Numantia in 133 B.C. The earlier date seems more probable; it is consistent with the period assigned to the Spanish forts; and it is unlikely that representatives of the fairly highly developed civilization of the later period would have brought no trace of it with them. Tentatively, therefore, a date of *c.* 200 B.C. may be suggested for the British *chevaux-de-frise* forts. The evidence from Pen-y-gaer, though it falls short of proof, is at least not inconsistent with such a dating.

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[24] *Arch. Camb.*, 1906, pp. 257–67.

[25] Caesar used an elaborate defence of wooden spikes during the siege of Alesia in 52 B.C. (*Bello Gallico*, vii, 73; I am indebted to Mr C. E. Stevens for this reference). It could therefore be argued that the distribution of stone *chevaux-de-frise* is misleading, and that many wooden examples have disappeared; none seem to have been recorded, however, except in Roman works, and it is equally arguable that Caesar derived the idea from Spain.

ANTIQUITY XXXI, 1957

The First Universities

by Humphrey Humphreys

UNIVERSITIES to-day all over the world—for their general pattern is everywhere somewhat similar—fulfil three main functions. They form the final stage of higher education; they supply a training in the professional techniques required by a civilized society; and they are places where learning is followed for its own sake; that is, where researches on many subjects are carried on. It is not often realized that historically the professional pattern is the older of the two and can in a certain sense be traced back to the dawn of civilization long before institutions calling themselves universities were dreamt of. For these first appeared in Italy as the darkness of the dark ages began to disperse. The barbarian invasions had swept away the schools of Roman civilization and the little learning that survived—almost entirely in the monasteries and cathedral colleges—was confined to what seemed desirable for a good monk or priest. But as the middle ages dawned and man's unconquerable curiosity once more emerged, universities were founded though they did not at first receive that name. The first was the medical school at Salerno which claims the 9th century as its date of birth and perhaps emerged from the famous Benedictine Abbey of Monte Cassino, the first of its kind, which early established a medical reputation. Then in the 12th century came the school of law at Bologna which attracted students from all over Europe, grouped when they got there into their separate ' nations '. About the same time the university of Paris took shape with a pronounced emphasis on logic—a cultural rather than a professional subject—in whose development the famous figure of Abelard played a leading part. Paris thus stands in some contrast to Bologna though it too was international in its student body. Oxford followed within a few decades, Cambridge in the next century, and in the 15th century the Scottish universities of Aberdeen, Glasgow and St Andrews. All these followed Paris in being partly cultural and partly professional academies. Indeed as other universities emerged in the principal cities of Western Europe this became the prevalent pattern, for most of them when fully established comprised schools of law, theology, medicine, logic, philosophy (still in most Latin countries the name for the Arts faculty) and natural philosophy which included astronomy and mathematics. It will be noticed that the first three are really professional subjects, for the Law and the Church supplied the administrators that mediaeval society required and men's bodies have always needed medical attention. The last three are cultural so that the mediaeval university presents a proper balance of the three functions served by such institutions. But it was not uncommon for students to switch from one school to another. For example Copernicus and Galileo, the two men who between them in the 16th century founded modern astronomy and explained the real nature of the universe, were both medical students for several years, the first at Padua, the second at Pisa.

But to appreciate properly the origins of these different schools or faculties we must go back to the very dawn of civilization. For more than 95 per cent. of the time man has existed as a species he has been merely a food gatherer like other wild animals. He took the first big step forward when—perhaps some 10,000 years ago—he became a food producer by mastering the arts of agriculture and pastoralism. But for several millennia these arts were primitive. Little is known of the methods in use at Jericho, the oldest settlement, but I have myself seen primitive agriculture in the Naga Hills, north of Burma. In winter a

patch of hillside jungle is set on fire and as soon as the ashes are cool seed is sown with a digging stick and a crop is raised and gathered. There are no ploughs and no oxen to plough them; next year the process is repeated on another jungle patch. A great advance occurred when primitive agriculturalists occupied the recently formed alluvial plains of the Mesopotamian rivers and later of the Nile. There every year the floods bring down punctually a new deposit of alluvium on which seed will literally bring forth an hundred-fold. At the same time the force of the floods is very destructive. That is why even to-day no bridges are possible on the Brahmaputra since the river may shift its course by several hundred yards in a single monsoon. The problem is solved by irrigation, and about the middle of the 4th millennium B.C. communities in Sumer (Southern Mesopotamia) mastered the techniques required and could cultivate the fertile new fields in relative safety. From this advance momentous consequences followed. There was a rapid increase in population and the emergence of classes not directly engaged in agriculture, priests, craftsmen, etc. An irrigation system demands co-operation between communities up and down the river and this necessitates the observance of regulations, in fact of *Laws*. Further, if artificial fields have to be divided amongst those who made them and their tribute assessed, they must be measured; and this led to the development of *Mathematics*. To prepare fields for the annual flood, which in both Egypt and Mesopotamia is normally quite punctual, men must know when to expect it. They therefore studied the stars to the stage when an accurate calendar could be drawn up. By the 3rd millennium B.C. the priests of Egypt had already measured the length of a year accurately to within two hours, and a little later the priests of Chaldaea could prophesy eclipses. For these developments of Law, Mathematics and Astronomy were carried out by companies of temple priests who alone had the leisure and the talents to devote themselves to the accurate observations and the thinking required. To record these observations and other important things like tribute paid writing was developed; and as all this work was done by priests they naturally recorded also the elements of their religion. There is also evidence that they acted as the physicians of their society, for priestly treatises on medicine survive from the 3rd millennium B.C. Thus 5000 years ago the priestly colleges of Egypt and Sumer were studying Law, Mathematics, Astronomy and Medicine, and had mastered the three R's of Writing, Reading and Arithmetic. It will be noticed that they thus anticipated the pattern of the mediaeval university, only Logic and Philosophy being absent; we owe their introduction, as we shall see later, to the Greeks, and their place in the orient was taken by religion. These priestly colleges were in fact the universities of early civilized society and fulfilled the same functions. But there is reason to suspect that they may have been more akin to the modern than to the mediaeval university; for in the same period in which the Sumerians and Egyptians made this striking intellectual progress they made equally dramatic practical discoveries. Both the wind and animal power were harnessed to the service of man, for sails and draught oxen appear. This led to the evolution of the plough and of wheeled vehicles and the wheel was also applied to the turning of pottery. The emergence of large settled communities in cities opened the way to applied arts like architecture and to civil engineering. [It may be remarked in parentheses that the so-called fine arts, painting, sculpture, music, song and dance are far older, and had been developed long before the dawn of civilization. Perhaps for that reason they have never been included amongst the major activities of universities.] Finally came the momentous discovery of metallurgy, first in copper then in bronze alloys. All these inventions were completed before 3000 B.C., at a time when Europe was inhabited by small and widely scattered tribes of savages living by food collection, and were made in the course of a few centuries. They are all anonymous and there is no direct evidence of their connection with the temple colleges

where priests were working at the same time on the intellectual programme, equally important practically, which has just been described. But the coincidence in time and place is so striking that it is impossible not to suspect some connection between the two; and to think that we have here the first fruitful collaboration between the man of thought and the practical man, the research worker and the engineer, in fact the modern pattern of university.

The collaboration was short-lived. The reasons for this are complex but two factors were the appearance of imperialist conquerors of whom Sargon of Accad was the first, and the development of the priestly colleges into esoteric communities concerned with religion to the exclusion of more practical activities; for most of the important religions became increasingly other-worldly. The mudbrick palaces of the Pharaohs perished in a few centuries, their tombs, the Pyramids, have remained one of the wonders of the world: the Buddhist's ideal is the attainment of Nirvana or nihilism: early Christian philosophers like St Augustine and St Benedict recommended withdrawal from the world of men to contemplate the City of God. Other factors played a part and for nearly 5000 years, from about 3000 B.C. to the 18th century A.D., no really revolutionary advance occurred in the techniques of civilization. History only records its slow spread, not without periodic setbacks, over the six continents. Improvements of course occurred, iron replaced bronze, ships sailed on the open sea not only along rivers and coast-lands, gunpowder and printing were invented—both of them explosive innovations. But it was not till the 18th century when men harnessed chemical energy to drive machines, the 19th when electrically driven and internal combustion engines, the telegraph and telephone appeared, and the 20th when the air and the atom alike were conquered that fundamental progress in man's command over nature was again resumed. Life in the 18th century London of Henry Fielding and Dr Johnson was not radically different from life in Athens 2000 years before or in Ur of the Chaldees 2000 years earlier still.

European civilization owes its special pattern largely to the mould of thought created by the Greeks who, in rebellion against the antiquated pattern of their polytheism, were the first to exalt reason to the position of supreme arbiter in human thought. The schools of Athens were in fact the universities of the time where philosophy and logic replaced theology; that is why these subjects were added to the ancient syllabus and loom so large in the studies of mediaeval scholars. Greek prestige is so high, its achievements in the world of art so outstanding that we are apt to forget its failure to cure the crippling dichotomy between men of thought and men of action which halted the march of man for so many millennia. Hellenistic mathematicians made immense progress but it was thought for thought's sake. They were not concerned to apply their discoveries to improving the material lot of mankind; and if this remains too low spiritual and mental progress is halted too. The mediaeval universities inherited with the renaissance of learning this fatal fault of Greek thought and it was not until the 18th century that the tide began to turn. It was in the university of Glasgow that James Watt (as a technician not an undergraduate) did his fundamental work on the steam engine at a time when Oxford was so closely immured in the cloister of classical scholarship as to incur the scorn even of Gibbon its alumnus. Another century elapsed before scientific research in universities and the scientific training there of technologists began to produce that revolution in the living of civilized societies which is the hallmark of our age.

Notes and News

CIVILIZATION, CITIES, AND TOWNS

If I have a complaint against distinguished contributors to ANTIQUITY and, indeed, its Editor himself, it is not that they use a different terminology to mine, but that they neglect the peculiar potentialities of the English language to express relatively subtle shades of meaning.

The use of the words ' civilization ', ' city ', ' town ', by Kenyon (ANTIQUITY, xxx, 192), Wheeler (*ibid.*, 132–4) and the Editor himself (*ibid.*, 129), in reference to neolithic Jericho, in no wise enhances the transcendant significance of the site. It just deprives prehistorians of convenient terms for giving expression to economic and sociological distinctions that can be recognized in the gross material data provided by dirt archaeology. Good English usage contrasts towns not only with villages but also with cities. Since the 18th century ' civilization ' has been applied to the culminating term of an historical process.

Lewis H. Morgan gave a more precise anthropological content to the terms ' savagery ', ' barbarism ' and ' civilization ' as denoting successive stages in cultural evolution. When the prospect opened in the 1920's of giving sociological or economic significance to the technological divisions of the archaeological record, Morgan's terminology, with some modifications of his criteria, seemed quite convenient. As a result of the insistence by Elliott Smith and Perry on the contrast between ' food-gathering ' and ' food-production ', ' savagery ' was equated with the parasitic economy of hunting, fishing and collecting and opposed to the productive economy based on agriculture and/or stock-breeding distinctive of ' barbarism '. Now just at that time the best known early neolithic cultures in Europe—Windmill Hill (just discovered by Leeds and Keiller), Vouga's Lower Neolithic on the Swiss lakes, and the Danubian of the Central European löss-lands—had been shown to rely for their food supplies on cultivation and stock-breeding as against hunting and gathering activities more than later neolithic cultures in the same provinces. Hence the criterion of neolithic became agriculture and/or pastoralism. So neolithic was also the first stage of barbarism.

Neolithic settlements seemed much larger and more numerous than palaeolithic or mesolithic ones, and comparative demographic studies show that the opening up of fresh food supplies is normally followed by a quite rapid increase in population. The observed and inferred increase at the beginning of the neolithic was then compared to that which ensued on the Industrial Revolution in Britain. On this analogy I termed the initiation of food-production ' the Neolithic Revolution '. But I was always at pains to insist that ' the revolution ' was not a single catastrophic event, but a slow, continuous process whose culmination could be defined only arbitrarily. After all, the foundations for the Industrial Revolution were laid in the Middle Ages and its climax lasted a hundred years. The Neolithic Revolution should occupy at least as many decades, perhaps as many centuries.

Ideally the long formative period should be divisible into two phases as Braidwood suggests (ANTIQUITY, xxx, 223). Archaeologically his first phase, ' incipient agriculture and/or animal domestication ' is hard to detect. Cultivators can hardly be recognized unless they had standardized implements of durable material for tilling the soil, reaping or processing the crop. To identify stock-breeders on acid soils where bones dissolve or within the natural habitat of domesticable animals is almost hopeless. Still, as Braidwood well

puts it, ' we have glimpses ' of this phase in caves round the Caspian and Mount Carmel and in middens in North Africa. But also in Europe it is now archaeologically discernible. The Early Tardenoisean or Sauveterrian bones of sheep or goats from Couzoul and Téviec no longer stand alone. Some microlithic industries may mark the tracks of food-gatherers who also bred small-horned cattle, and were to that extent incipient food-producers. Wherever osteological evidence is available at all, mesolithic groups in Europe were accompanied by dogs. At least in Europe ' mesolithic ' actually does denote, if not necessarily the phase of incipient food-production, at least the long transitional epoch during which incipient food-producers were about.

On the other hand in radiocarbon age ' the upper part of the pre-pottery neolithic ' of Jericho falls within the range of North European Mesolithic II (Maglemose), and the lower part may well turn out to be as old as Mesolithic I (Star Carr). But in our continent the neolithic begins with Danubian I, Starčevo, Cortaillod and TRB. But that is precisely Braidwood's second phase marked by village farming communities. For its beginning at a village on the northern edge of the Danubian province radiocarbon gives the respectable age of 4200–4000 B.C.

As a convenient, easily recognizable criterion of his third main stage—but not as a definition of its content—Morgan took writing. It in fact not only represents a new instrument for the transmission of human experience and the accumulation of knowledge, but is also symptomatic of a quite novel socio-economic structure—the city. In English this untranslatable word implies a cathedral, a bishop's palace, a body of canons and other clergy, and a large number of laymen who are neither farmers, fishers nor hunters. I have taken this as the essential character of a city: a community that comprises a substantial proportion of professional rulers, officials, clergy, artisans and merchants who do not catch or grow their own food, but live on the surplus produced by farmers or fishermen who may dwell within the city or in villages outside its walls. These professionals and full-time specialists represent a new class of persons, an absolute addition to the population that could be included in, or supported by, any barbarian community. This increment is my justification, or at least excuse, for speaking of an ' Urban Revolution ' on the analogy of the Industrial Revolution or the Neolithic Revolution.

Of course this Urban Revolution, just like the Neolithic Revolution, was a gradual cumulative process. There are intermediate stages between self-sufficing, i.e., neolithic, food-producing communities and ' cathedral cities '. It may be arbitrary to choose writing as marking the critical point. But what is the alternative ? The criterion cannot be mere size. What are universally accepted as villages in Africa, South-Eastern Asia and Mediterranean Europe to-day are more extensive and more populous than most Sumerian cities of the 3rd millennium. Nor can public works be accepted. The seven-hut village of Skara Brae boasted a monumental sewer and paved streets. Many neolithic villages and mediaeval villages too in Europe were walled. Indeed a village may comprise a parish church and a priest and a village smithy with a resident smith. And the affairs of most villages are directed by a headman of a council of elders.

If anything intermediate between a neolithic village and a city is to be recognized, it must be defined by the same sort of economic and sociological factors. Any Bronze Age community had abandoned self-sufficiency (unless located on a copper mine). But few such communities in Temperate Europe supported a resident smith. On the other hand Early Aegean settlements, like Troy, Thermi, or Phylakopi, not only comprised resident smiths and sometimes professional potters and jewellers too, but also must have relied to an appreciable degree on overseas trade, perhaps even to supplement home-grown food. Though Troy II occupied an area about one-third of that of neolithic Jericho, it was further

advanced on the way to civilization as above defined. I find it tempting to profit by the unique advantage of the English language and call such settlements, more complex than villages yet not deserving the title of ' city ', ' towns '. V. G. CHILDE.

[We welcome Professor Childe's criticisms and will try to be more careful in our choice of words. He himself had laid the foundations on which these subtle distinctions rest, and he has every right to demand that we should use the correct terminology for them.—EDITOR.]

COMMENT ON ' EARLY GOATS ' (PLATE VIII, B)

The short article on ' Early Goats ' in the June 1956 issue of ANTIQUITY raises two major problems which, in my opinion, merit further discussion.

1. Professor F. E. Zeuner has stated (*Palestine Exploration Quarterly*, April 1955), and you quote him correctly, that the earliest, straight-horned domestic goats of the Neolithic period were replaced by goats with spiral or screw-horns in the Chalcolithic and Bronze periods of the Eastern Mediterranean. When you continue, however, ' Attention was first drawn to *them* (italics mine) in ANTIQUITY (XI, 1937, pp. 226–8) by Prof. Amschler . . .', you are presuming that the screw-horned goats mentioned by Prof. Zeuner were necessarily of the Girgentana-type discussed and figured by Prof. Amschler. The remainder of the article on ' Early Goats ', which is limited to further discussion of goats with the Girgentana-type horns, verifies this conclusion.

I cannot find any indication in Prof. Zeuner's article, however, to support a conclusion that he was referring to such Girgentana-type screw-horns. It is my opinion that Prof. Zeuner is merely stating that the earliest known goat from Jericho had horns of the scimitar or straight type, as in the wild *Capra aegagrus* of South-Western Asia, and that subsequently domestic goats are found in which the horns are *not* straight, but are twisted, and thus similar to those of most domestic goats.

The change from the straight horn-core with an almond-shaped cross-section (Zeuner, *op. cit.*) to that of a horn-core with an incipient twist and a flattened inner surface (PALTE VIII, B) had already happened before the Chalcolithic, as such advanced types were present in the village-farming community of Jarmo in the foothills of eastern Iraq, approximately 6700 years ago. Wild-type horn-cores are also found at Jarmo, side by side with the ' domestic ' type, so there may have been at that time both straight and twisted horns in the domestic flocks, or the wild-type cores may represent true wild goats, which are still present in the adjacent hills.

If one followed the argument expressed in the article on ' Early Goats ', one would have to assume that *all* domestic goats subsequent to the early Metal Ages were necessarily derived from those with Girgentana-horns; I do not believe that the evidence supports such a view, or that Prof. Amschler or Prof. Zeuner intended their remarks to be so interpreted.

The difficulty involved in this first problem seems to be a misunderstanding of the meaning of ' spiral or screw-horned ', as used by Prof. Zeuner merely to mean not-straight. The Girgentana-type horn would seem to be a special genetic variant of the general spiral-type, but its sporadic appearance at different times and places does not prove the continuity of any specific breed through all the time involved, nor indicate a blood relationship of all the individuals involved. I have observed this Girgentana-type horn, as a rare feature, in flocks of domestic goats in the mountains of Iraqi Kurdistan; in such instances, the goat was merely one of a flock, the remainder of which had the more typical screw-horns. Presumably, the Girgentana-type horn is due to a particular genetic combination which

can occur by chance in any flock carrying the potential genes; if a goat bearing such horns is selected for propagating this character, as has probably happened several times in the past, then a population could be developed which bore only the Girgentana-type horns. As long as such a population was maintained, with no out-crossing, it could be referred to as a ' breed ', but it does not represent a distinct species.

2. The use of specific names as applied to domestic animals is the second problem to which I wish to allude; it is brought to focus by the series of articles, on goats with Girgentana-type horns, which has appeared in ANTIQUITY at different times from 1937 to 1956. Linnaeus, in his Tenth Edition of the ' Systema Naturae ' (1758), designated the domestic goat as *Capra hircus*. Since, according to the International Rules of Zoological Nomenclature, names in this publication have priority over any subsequent names, all domestic goats, so long as they form, actually or potentially, an interbreeding population, can bear no name but *Capra hircus*. To call a goat *Capra girgentana*, merely because the shape of its horns varies from that of other domestic goats, is no more logical than would be the separation of people into species by differences in shapes of their big toes.

Each domestic animal has one specific name, and one specific name only. It is true that there are basic difficulties in naming domestic animals and their wild relatives as we investigate these animals at the time of origin of domestication, but this problem need not confuse the basic issues considered here.

CHARLES A. REED,
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FORE AND AFT RIGGING IN THE ROMAN EMPIRE

A recent number of *The Mariner's Mirror* (Vol. 42, No. 3, Aug. 1956) contains two notes, one critical and one favourable, on Professor Lionel Casson's recent article in the February number of the same journal (referred to in ANTIQUITY, No. 119) claiming that the Greeks and Romans of the 2nd to 4th centuries A.D. used sprit sails and lateen sails.

On p. 238 in ' Fore and Aft Sails in the Ancient World ', L. Guilleux la Röerie, though he does not deny the possibility of fore and aft rigs in the ancient world, is nevertheless of the opinion that Casson's instances were not convincing. He considered that the alleged sprits on Casson's Plate I Nos. 1 and 3 were only symmetrical braces, that Plate I Fig. 2 was too vague to be useful, that he could not see the diagonal spar on Plate II Fig. 4 and that on Plate II Fig. 5 the ordinary motive of a man pulling at a brace has evolved into a man holding a spar.

On p. 239 in ' The Earliest Lateen Sail ', Richard Lebaron Bowen Junior, who has had great personal experience of handling lateen-rigged boats in the Arabian Gulf, expresses complete confidence in Casson's examples of sprit sails and only criticizes the evidence for the lateen sail so far as to point out that Casson's photograph was taken from a copy, whereas a photograph taken directly from the relief in Athens shows that this sail would be more accurately described as a short-luff lugsail (as indeed are practically all the so-called lateen sails of Arab dhows now in the Arabian Gulf). Cf. H. H. Frese, *The Mariner's Mirror* 42. No. 2, 1956, p. 101, for other varieties of dipping lugs.

R. W. HUTCHINSON,

DIGGING-STICKS AND THEIR USE IN JAVA

The following extract from a letter written in 1939 by the late Professor R. G. Collingwood, soon after his return from Java, has been sent us by Mr Angus Graham, to whom we tender our thanks:

' I have seen digging-sticks in use, among tribes who have no ploughs or mattocks

(the spade is non-existent in these countries), and I never knew before that a digging-stick is exactly like an oar to look at, and that you use it exactly like a paddle, the blow falling just outside your left foot (or right foot if you are left-handed). A capable user of the digging-stick can turn a furrow with it that looks just like a ploughed furrow, so that in that tribe's country I thought at first, to judge by the fields, that they must have ploughs. As for lynchets, I never dreamed of the like. Sawah-agriculture, for growing rice, is all done in plots of land each one of which is levelled and surrounded with an earth rim, so that it can be flooded. Believe it or not, they will make sawahs on a slope of 45°, each sawah 4 ft. wide, with a 4-ft. vertical earth scarp above and below it; and they will lift their ploughs up and down these scarps, and the buffaloes for ploughing will scramble up and down by means of a step, and never injure the earth rims of the sawahs in doing so. They think it quite worth while to take a plough and a couple of buffaloes into a sawah measuring 4 by 6 feet; that is an extreme case, but on steep ground sawahs of 8 by 12 are not at all rare '.

THE SUTTON HOO SHIP BUILT IN SWEDEN?

In recent years it has been argued convincingly by R. L. S. Bruce-Mitford that the Sutton Hoo find points to the fact that the man who founded the East Anglian dynasty *c.* A.D. 550 was of Swedish origin. ' All the phenomena in the Sutton Hoo ship-burial that we have discussed ', he points out, ' are perfectly explicable if we suppose that Nerman's Swedish conqueror established his control over East Anglia not at the period of our burial —mid-7th century—but a good deal earlier; in fact, that he was the man who founded the East Anglian dynasty in the mid-6th century. What we find in the burial would then be Swedish heirlooms (sword, helmet, shield) treasured as symbols of the origins or history of the royal house. . . .' [1]

It is the purpose of this note to suggest that there is evidence that the Sutton Hoo ship itself was of Swedish construction; that it may even have been one of the vessels in which ' Nerman's Swedish conqueror ' crossed to England to found the East Anglian dynasty *c.* A.D. 550.

Anyone who reads the poem *Beowulf* and then studies the construction of the Sutton Hoo ship must be struck by the fact that the poet speaks almost nonchalantly of masts and sails whereas the Sutton Hoo vessel is said to have contained no provision for a mast. Miss Dorothy Whitelock has drawn attention to this contradiction in *The Audience of Beowulf* (Oxford, 1951, p. 84): ' Scyld's ship had a mast, whereas the Sutton Hoo ship was mastless, but this need not be a significant discrepancy, for one cannot argue from one ship without a mast that sailing ships were unknown at the date of the Sutton Hoo burial '.

Now it is obvious from evidence both inside and outside *Beowulf* that sailing ships were the very reverse of ' unknown ' among the Anglo-Saxons for centuries before the Sutton Hoo burial. Admittedly the poem was composed somewhere between 700 and 790, while the ship was buried about 650, but the poet writes as if he and his listeners had never heard of a time when their ancestors were not building ships with masts and sails, even when he is describing ships built centuries earlier. To him the sea is, and has been for centuries, the ' sail-road ' (*segl-rād*, l.1429), and in lines 36, 217, and 1905–6 there are further casual references to masts, sails and rigging.

This evidence is corroborated by that from the classical writers. In his article *The*

[1] *Proceedings of the Suffolk Institute of Archaeology*, vol. 25, part 1 (1949), p. 74. See also the same writer's *Appendix* to R. H. Hodgkin's *History of the Anglo-Saxons*, 3rd ed., Oxford, 1952, pp. 721–4.

Nydam Craft and the Anglo-Saxon Invasions in *The Mariner's Mirror* of Feb. 1955 (vol. 41, no. 1) G. J. Marcus writes: ' What is perfectly clear from both classical and British sources is that towards the close of the Imperial period the Saxon raiders came over in sailing craft '. He points out that the poet Claudian, writing in the 4th century, implies in *De consulatu Stilichonis* that the Saxon vessels were dependent on the wind. In the following century Sidonius Apollinaris (Letters, VIII, vi, 15) tells of Saxon war-craft with ' sails and firm-holding anchors '. Lastly Gildas (*De excidio*, ch. 23) says that some Saxon settlers sailed over, in the middle of the 5th century, with a favouring wind, *secundis vellis*.

The upshot of all this is that, if it can be proved beyond doubt that the Sutton Hoo ship had no provision for a mast, then the only way we can explain the appearance of such a ship in the England of A.D. 650 is to look elsewhere for a civilization where a mastless ship of that size could have been built at that time. There is some evidence that there *was* such a civilization in southern Scandinavia about that time. In their book *The Viking Ships* (p. 58 of the 1953 English edition) Brøgger and Shetelig describe how the use of masts and sails reached that region between A.D. 600 and 900. ' What now remains to be accomplished in boat-building,' they write, ' is the achievement of full strength and solidity in the keel part, so that they could raise a proper mast and employ sail at sea in all weathers. This takes place in the centuries between the Kvalsund ship and the Gokstad ship, the years from 600 to 900. . . . It was through these innovations of keel and cross-pieces, which may look simple enough, that it became possible to give the ship an efficient spread of sail '.

The Sutton Hoo ship was old when buried about A.D. 650, to judge from patches on its hull. If it had been ' treasured as symbol of the origin or history of the royal house ', it may not be impossible that it was nearly 100 years old when buried, a relic of the period when there was close contact between East Anglia and East Scandinavia. As Mr Bruce-Mitford has pointed out (1952, p. 722): ' The occurrence of boat-graves elsewhere in Suffolk shows that the Swedish element, if such there be, occurs on a broader front, and the traces of Swedish influences in locally made archaeological pieces, both in this grave and outside it, indicate a sustained and dynamic Swedish element, not a casual and negative one.' It may easily be that the ship itself represents part of this Swedish element, for how else can we explain the fact that a people who had been building masted ships for centuries, as the ancestors of the Beowulf poet had apparently been doing should build a vessel of the size of the Sutton Hoo ship to be driven by thirty-eight oars alone ? It may be that further study of the Sutton Hoo evidence, in conjunction with the growing body of information from Sweden, will throw further light on this possibility. N. E. LEE.

Reviews

THE WORLD OF ODYSSEUS *By* M. I. Finley. *Chatto and Windus.* 15*s.*

Dr Finley is an expert on Attic land-tenure and this gives a peculiar value to his study of social conditions depicted in the *Odyssey* (and the *Iliad*). The book is easily written and is designed for Greekless readers, but they are given references for every statement, a bibliography with an assessment of all the works quoted (including translations), indices and a map (which strangely marks Dörpfeld's Pylos instead of Blegen's Pylos). After an introduction on earliest Greek history and the nature of Homeric poetry successive chapters deal with wealth and labour, household, kin, community, morals and values. What Dr. Finley has to say about the rôle of gifts in the world of Odysseus (which has not been fully discussed before although many parallels are known to anthropologists) is perhaps the best as well as the most original part of the book. The principle of *do ut des* governs man's relations with the gods, with his future father-in-law, with his superiors and inferiors, and with his friends at home and abroad. The importance of treasure is partly that it enables its possessor to secure in exchange the things like metal which cannot be produced within the household (the essential unit of this world), partly that it is a symbol of honour, because ' the heroic world was unable to visualize any achievement or relationship except in concrete terms '. At the end the author has interesting things to say about a new moral view of the gods which rests on a completely different principle.

Here, as sometimes elsewhere, the author admits the contribution of the latest poets. Generally he speaks as if the world of Odysseus existed in time: ' the most likely centuries seem to be the tenth and the ninth '. He dates the *Odyssey* about a hundred years later than the *Iliad*, which he puts in the latter half of the 8th century. When all allowances are made for the conservative character of poetry which is in an oral tradition (even if recorded), this gap is enormous for a period when linguistic usage was changing fast, as the early elegiac poets show in spite of their almost entirely Homeric vocabulary. But, although it may be questionable what absolute date can be given to the *Odyssey*, it is more questionable whether an absolute date can be given to the world of Odysseus at all. A brief appendix emphasizes the likeness of the world of the Mycenaean tablets to earlier oriental civilizations and its unlikeness to the Homeric world. Yet it is not difficult to find evidence in the tablets for the system of gift exchange, the system of allegiance, and for the divinity of the *wanax* (*not* the *basileus*) and of the great warrior (which causes Dr Finley some heart-searching). The Mycenaean background of the story has been retained as far as it remained intelligible through the generations, as much of it did; partly, however, the scale has been reduced; sometimes conventional descriptions have survived although they correspond to no known reality; sometimes new elements have been introduced (particularly of course in fighting where the technique changed essentially). The world of Odysseus in Homer is the end-product of this process. Something can now be known of three periods: first, Mycenaean civilizations, as revealed by tablets and archaeology, against its contemporary Eastern background; secondly proto-geometric Athens; and thirdly 8th century Ionia, for which the recent excavations at Smyrna and Chios are very revealing. Few could portray these periods and relate them to Homer better than Dr Finley, and it is to be hoped that he will do it; but for the moment we may be very grateful for the present book.

T. B. L. Webster.

THE FOSSIL EVIDENCE FOR HUMAN EVOLUTION. *By* W. E. Le Gros Clark. *Chicago University Press* (*for whom Cambridge University Press act as agents*), 1955. *pp.* 181, 20 *text figures.* 45*s.*

This volume is the second in a series entitled *The Scientist's Library: Biology and Medicine*, under the general editorship of Dr Peter P. H. De Bruyn. In this series, which is intended for the specialist and non-specialist alike, emphasis is placed on introductory concepts and problems, evaluation of the present status of the subject dealt with, and the clarification of terminology and methodology. These objects have been achieved admirably in the present instance. The quality of the binding is good and that of the paper and typography high.

The headings of the five chapters are instructive of the contents of the volume and the manner in which the subject has been approached. The headings are as follows: (1) Morphological and Phylogenetic Problems of Taxonomy in relation to Hominid Evolution; (2) Homo; (3) *Pithecanthropus*; (4) *Australopithecus*, and (5) The Origin of the Hominidae. The author makes it clear at the outset that this work does not set out to be an exhaustive treatise; only the more important fossil material is dealt with. This is used to indicate the main framework of paleoanthropology and the broader conclusions which can legitimately be drawn from the available facts. The exposition is in no sense technical and is a logical, balanced analysis of the sort that is eminently suitable for the beginning student and yet has a great deal to offer the specialist as well. There has long been a need for a volume such as this and we are indebted to Sir Wilfred for filling the need in so satisfactory a manner. Owing to the rapid advances which are being made in paleoanthropology at present, it is inevitable that the book is already out of date in some respects. For example, the taxonomy of the australopithecines is now much better understood—as is the dating—than it was at the time of writing. However, there is no doubt that this work will long be used in universities and laboratories the world over.

There is, nevertheless, one serious criticism which must be levelled at this book, and that is the very high price. It seems difficult to justify so high a price for a small volume without half-tone illustrations and with very few tables. This is especially unfortunate in view of its suitability for university students.

J. T. Robinson.

UR, ASSUR UND BABYLON: drei Jahrtausende im Zweistromland. *Von* Hartmut Schmökel. *Gustav Kilpper Verlag. Stuttgart* (*Pischekstr.* 72), 1955.

DIE WELT DER HETHITER. *Von* Margarete Riemschneider, *mit einem Vorwort von Prof. Dr Helmuth Th. Bossert. The same.* D.M. 22.50.

These two fine picture books, with 145 and 116 pages of text to give the background of their over a hundred excellent half-tone illustrations, are evidence of the widespread interest, at a high level of culture, that archaeology has aroused. All our old friends are well represented, as well as some new ones, and the photographic qualities of the illustrations are, as always in German publications, very high. (An exception is the Jebel el Arak knife-handle, in UR, Plate 5; but so long as the authorities of the Louvre refuse permission for the taking of adequate modern photographs, we shall have to be content with this ancient woolly substitute, which gives a wholly misleading impression of the beautiful clean-cut outlines of the original, and which antedates its restoration.) There is a full list of captions for the plates, giving references to the original publication when not here published for the first time. In the UR volume (but not in the other) the present location of the objects is given as well, and there is also a chronological table of the chief rulers and periods. The dates are those of the 'short chronology' of Albright-Cornelius, which

gives only two centuries (*c.* 3000–2800 B.C.) to the whole of the Uruk period, and one to that of Jemdet Nasr immediately following. The bibliography omits Sidney Smith's important monograph on the revision of the chronology demanded by the Alalakh evidence, which has been generally accepted. In the HITTITE volume the dates given are those of Gurney in his Penguin book; it would have been useful to have given them in tabular form. Where there is a difference of opinion it would have been better, instead of adopting one system, to give alternative dates in parallel columns.

Both books are intended, we imagine, for those who are not specialists in the archaeology of the Near East, though some of these may be specialists in that of other regions. The latter may justly hope that some day someone will publish for their benefit a corpus of the pottery and other small objects characteristic of the different periods. Pottery is the archaeologist's most valuable evidence, but in these two volumes only one pot is illustrated (UR, Plate 89), and that a late one. But to study fine art, so called, in isolation is to follow a wrong method, and can only give an imperfect picture of the culture of the societies concerned. No doubt it would be practically difficult to cover the whole field in a single volume, at any rate when so wide a field is chosen; but the criticism nevertheless remains valid. There is, for instance, no corpus of Anatolian pottery to which the student of Aegean and West Mediterranean prehistory can turn when tracing possible origins or contacts, though such have been postulated by serious investigators. Yet there is plenty of it in spite of the deficiencies of some of the earlier excavations. O.G.S.C.

THE FIRST PHILOSOPHERS. *By* GEORGE THOMSON. *Lawrence and Wishart, London*, 1955. *pp.* 1–367. *27s. 6d. net.*

The reader should be warned that the title *The First Philosophers* is not very descriptive of the contents of this book; for of its 347 pages only 115 (156–72, 249–347) are occupied with philosophers. The title of the series, *Studies in Ancient Greek History*, is really more descriptive, for the whole of the volume is, apart from certain preliminaries about the Near and even the Far East, occupied with ancient Greek history.

Professor Thomson is a convinced Marxist, and in accordance with the principles of the Marxian dialectic is convinced that the whole life and thought of any people is determined throughout by the stage which it has reached in the advance from primitive communism towards modern communism. The quotations from Marx are numerous, and I have found them in the end rather wearisome. Constant quotations from a non-Marxian work, if such a work on the Marxian scale existed, would be equally tedious, and would produce on the reader the impression that the writer had before writing the book already made up his mind what conclusions he was going to reach about the detailed questions to be raised.

Having expressed this preliminary grouse and warning, I must next express my appreciation of the book in several respects. It covers a very wide field, dealing with the whole of Greek history down to the 3rd century B.C. and with a good deal of the history of neighbouring peoples. The book is excellently written; the translations in it are, so far as I have tested them, accurate, and they include many verse translations which show a real feeling for poetry. The way in which Professor Thomson writes of the sufferings of slaves and other under-privileged people is often moving. He has studied carefully much that has been written about early society and its development from the primitive communism with which he thinks it began. He describes as his two main subjects (p. 7) the growth of slavery and the origin of science. On the first subject he says in his preface that no systematic study of slavery can be expected from bourgeois scholars, ' whose acquiescence

in colonial oppression renders them incapable of understanding the degradation either of the slave or still more of the slave-owner '. In saying this he is scarcely fair to the many thousands of non-communists who detest slavery and all its works as much as any communist can.

The contents of the first 101 pages may be briefly indicated by giving the chapter headings: Speech and Thought, Tribal Cosmology, China, The Near East. In this part of the book the section I have found most interesting is the chapter on the Near East, in which a careful account is given of the organization of the Egyptian and Mesopotamian kingships, and a short account of the standpoint of the Hebrew prophets. On this chapter follow three on subjects to which Professor Thomson has given first-hand and valuable study: the Greek Calendar, the Kadmeioi, and the Greek Theogony; and then on p. 156 we come to the beginning of Greek Philosophy, in the Milesian school of Thales, Anaximander, and Anaximenes. These he describes (p. 158) as ' primitive materialists '. This seems to me a mistaken description. It is true that what they were concerned with describing was the matter of which the material world consisted, but there is nothing, I believe, to show that they believed that nothing exists but the material world—though they may very well have thought so. Still more doubtful is the statement (p. 159) that the three primary ideas of Anaximander—common origin, perpetual motion, and the conflict of opposites—' are derived from primitive thought, being in origin nothing more than a projection of the structure of the tribe '. The only evidence cited for this (p. 160) is the fragment of Anaximander: ' From this things come into being, and into it they pass away, according to necessity; for they render satisfaction to one another for their wrongdoing according to the order of time '; on which Professor Thomson says, ' The phrase which I have translated " render satisfaction " refers properly to the settlement of disputes between rival clans '. He is here surely making far too much of a natural metaphor, which may in any case refer to a dispute between individuals as probably as to one between clans.

From this he goes on to discuss the rival merits of the accounts given by Burnet and Cornford of the nature of these earliest philosophical systems, and pronounces in favour of Cornford, who traced connections between them and primitive writings such as the Babylonian Enuma elish, or Hymn of Creation. It cannot be denied that the derivation of land from water in the Enuma elish (see Thomson, p. 142) bears some resemblance to Thales' saying that all things are derived from water, but I think that both Cornford and Thomson exaggerate the resemblance between the Milesian school and the Enuma elish, and that Burnet was right in treating the Milesians as having introduced a new thing into the world, a theory of the material world based on observation, albeit only a crude observation. It is not without significance that the Milesian writers wrote prose, not poetry, and that they were followed in this by almost all the Greek philosophers, until we come to the much later Stoics. I believe that in essence Burnet was right, though Cornford's speculations are by no means without value. The whole tone of Greek philosophy is entirely different from anything that had preceded it.

Professor Thomson returns to Greek Philosophy in pp. 249–347, and says much that is interesting and important about the schools of philosophy from Pythagoras to Epicurus. But reviewers for ANTIQUITY are instructed that, ' generally speaking, reviews should be as short as possible '. I will therefore confine myself to a few further scattered observations. Generally my impression is that he has allowed himself to be influenced too much by the wish to interpret philosophical views as due not to pure thinking but to the political and economic status of the philosophers. Let me give one or two examples. On p. 263 we read, of the period of Anaximenes and Pythagoras, that ' it was precisely in Greece of this period that commodity production came to its full growth and revolutionized the whole of previous

society. Anaximenes and Pythagoras both reveal the characteristic outlook of the new merchant class, which was engaged in the exchange of commodities on a scale which appears very small by our standard but was unprecedented by theirs. The basic factor, therefore, was the growth of a society organized for the production of exchange values and the consequent decay of the old relations based on the production of use values. Hence the distinctive feature of their thought may be defined simply by reference to the essential difference, as defined by Marx, between production for use and production for exchange'. This seems to me to be a highly fanciful account. Can we really connect this cause with that which it is invoked to explain?

On p. 282 we read: 'If Herakleitos excels Pythagoras in his grasp of dialectics, this too must be ascribed to his class position. As one opposed to democracy, he was quicker to discern its internal contradictions, by which it was destined to be destroyed, and so was enabled to perceive the truth that only conflict, motion, change, are absolute.' Is *everything* to be ascribed to class-consciousness, nothing to innate difference of temperament or degree of genius?

Again (p. 311) we read, with reference to the Epicureans, 'The very word *atomon* means both "atom" and "individual". They made the elements of the universe impassive and imperturbable, because, in a society torn by discord, that is what they themselves strove to become. Their renunciation of public life, whereby they hoped to achieve freedom from everything that disturbed their spiritual tranquility, was an act of free will; and that is why they introduced into the determinism of Demokritos the element of chance.'

On p. 313 Professor Thomson quotes with approval Caudwell's remark, 'We now understand how it is that the Newtonian world presents such a strange likeness to bourgeois society *as the bourgeois envisage it*. It is atomistic. It is composed of individuals who merely proceed on their own right lines doing what the immanent force of each makes necessary. Each particle is spontaneously self-moving. It corresponds to the "free" bourgeois producer as he imagines himself to be'. So much for Newton!

Professor Thomson has a kind word for Aristotle (p. 314). 'It may be claimed that Aristotle rather than Epicurus stands in the true line of progress; for, although an idealist, he did not turn away from the world, but, on the contrary, examined it in concrete detail with a view to analysing its inner purpose. He denied that matter could move of itself, and ascribed motion to the agency of a First Mover, motionless, immaterial, divine; but this did not prevent him from affirming that matter is in perpetual motion. For him A may be not-B and yet contain the potentiality of becoming B. His system is teleological. It is a reaffirmation of Ionian evolutionism, materialist in content, idealist only in form.' I do not understand this.

Of Parmenides he says (p. 315): 'Just as his universe of pure being, stripped of everything qualitative, is a mental reflexion of the abstract labour embodied in commodities, so his pure reason, which rejects everything qualitative, is a fetish concept reflecting the money form of value.'

Of Plato Professor Thomson says (p. 328): 'His philosophy expresses the reactionary outlook of a selfish oligarchy clinging blindly to its privileges at a time when their social and economic basis was crumbling away. It is a philosophy founded on the denial of motion and change and hence of life itself.' May we not say of such statements what Professor Thomson says of ancient atomism (p. 312): 'This is not science but ideology'? I can only regret that Professor Thomson's wide knowledge and his gifts as a writer should have been so much nullified by a set of ideological assumptions.

W. D. Ross.

HISTORY AND ARCHAEOLOGY IN AFRICA: Report of a Conference held in July 1953 at the School of Oriental and African Studies. *School of African and Oriental Studies, University of London*, 1955. *pp.* 99 + 3 *maps.*

For many years now the archaeology of Africa south of the Sahara has meant primarily the study of the palaeolithic. We are all aware of the magnificent work of Dr Leakey in Kenya and of the small band of South African scholars working in the Union. As a result of their efforts the palaeolithic of a considerable part of Africa is now extremely well known, and the continent takes its place in the general picture of the development of early man which is now beginning to appear. Though the workers are fewer, the work is in every way comparable with that being carried out in other parts of the world, and no student of the period can ignore Africa and the contribution it has made to our understanding of human development.

For later periods the story is rather different, and comparatively little has been done to illuminate the history of the present inhabitants of Africa by archaeological means. There are exceptions to this, such as Miss Caton-Thompson's work at Zimbabwe. But these have been rare events, seldom followed up; consistent work to solve the problems of African history has been lacking. Now at the eleventh hour the situation is beginning to change, and the Conference of which this book is a report was a significant step in establishing the study of African history and archaeology as a serious subject and one to which our learned bodies might turn their attention.

The report contains in abbreviated form the proceedings of the Conference together with a very valuable bibliography. It consists of two main parts; the first part containing an edited version of the papers and discussions which formed the work of the Conference, and the second part a selection from the papers circulated as background material to the proceedings. There is thus a certain amount of duplication and it is not always clear why this formal distinction has been made.

All the contributions are of value. Most of them deal with the history of African peoples as preserved in oral tradition, and at this stage of our work it was inevitable that this should be so. There are, however, also important archaeological contributions, of which the outstanding ones are those by A. J. Arkell on archaeology of the Sudan south of Khartoum, and by the Rev. Gervase Mathew on the problems of East Africa and the results so far obtained, largely by his own efforts. Arkell's paper, which occurs in rather different forms twice, in Part 1 and Part 2, is a plea for study of the antiquities of the Sudan in the White Nile area as a possible means of supplying a chronology for Uganda and other parts of Central Africa. There are already hints that there may have been Meroitic influences at work in Uganda, and the certainly Meroitic pottery from some of the White Nile mounds makes them an obvious point of investigation for solving the problems which the Uganda material presents. Unfortunately conditions in the Sudan make it unlikely that much is to be hoped for from there for some years.[1]

As well as discussing archaeological and historical problems the Conference passed some extremely important resolutions, calling for the setting up of proper Departments of Antiquities in British African territories and for the establishment of a school of archaeology on the analogy of those in Athens, Rome and Ankara. Some of these resolutions are beginning to bear fruit, and there is every ground for thinking that when such a Conference is held again there will be more archaeologists able to speak with first-hand know-

[1] It is perhaps worth pointing out that the Editor of this Journal with his usual prescience had already pointed to the importance of these White Nile sites in his article ' People Without a History '. ANTIQUITY, XXII, 8–12.

ledge and to supplement with the results of their field-work the collections of oral tradition which are in the main all we now have. P. L. SHINNIE.

SAMOTHRACE. A GUIDE TO THE EXCAVATIONS AND THE MUSEUM. *By* KARL LEHMANN. *New York University Press*, 1955. 102 *pp.*, 51 *figures and a plan.* $2.50.

Since 1938 an American team has for eight seasons dug in the sanctuary area on the Greek island of Samothrace. They were preceded, in the last century, by both Austrian and French archaeologists, whose most notable find was the marble Victory which is now the crowning glory of the Louvre. The Americans have confined their attention to the main buildings in the Sanctuary of the Great Gods, and though their finds do not match those of their predecessors (they found the Victory's battered right hand), they have succeeded in giving us coherent plans of the buildings, and promise of some light on the early archaeology of a little explored corner of the Aegean. The excavations are now over, and it is the consecration of the newly-built museum there which occasions this Guide. In it Lehmann writes for both visitor and student, and both should be well satisfied. The site and museum are succinctly described, and the more controversial points about Samothracian history and the mystery cult which flourished there for nearly a millennium are discussed briefly. The photographs, by Wachsmann, are superb, and other professionals might well learn from them how objects of little intrinsic beauty can be presented in an interesting manner and with no loss of detail. The book is as well produced as its price suggests it should be. JOHN BOARDMAN.

TRAVEL AND TRANSPORT THROUGH THE AGES. *By* NORMAN E. LEE. *2nd Edition, revised*, 1955. *Cambridge University Press.* 187 *pp.*, 84 *text figures.* 12*s.* 6*d.*

In this age of specialization it is strange that books dealing with particular aspects of man's activities are rare in archaeological literature. Transport in particular has been rather neglected, in spite of its basic importance in the study of agriculture, migrations, trade, war, exploration and so on. This new edition of a book first published by the Melbourne University Press in 1951 is therefore to be welcomed; it deserves the wider attention it is sure to get and is particularly valuable as it is written in simple language (it is intended primarily for schoolchildren). The history of transport is traced from the taming of the wolf in Mesolithic times to the jet-engine aircraft. But transport is not the only subject: as the title implies, the story of travel is included as well. One has the feeling that the author has attempted too much; if he had written one book on transport and another on travel, they would probably both have been very successful. As it is, the thread of the narrative is often lost by jumping from one to the other. The arrangement is roughly chronological, as it should be; but Mr Lee is a history master and is too fascinated by his subject to resist the temptation to digress. It is justifiable to describe, say, the voyages of Leif Ericsson because they illustrate what could be done with ships of the Gokstad type; or again, the story of the Crusades is relevant since it is bound up with the breeding of huge horses or destriers capable of carrying a knight with nearly a quarter of a ton of armour. But there is less excuse for an account of Sanskrit and the origin of Indo-European languages and still less for a whole chapter on ' The Story of the Hindu Figures '. The author's explanation (or apology) is that ' the technique of measurements and counting has followed the caravans and galleys of the great trade routes '. This might be said about the spread of almost every invention, but in a book of less than two hundred pages it would be

better to give more details of the caravans and galleys and less about language and numerals. There are many interesting and legitimate digressions: caravan routes across Asia, for instance, would be meaningless without an account of the Chinese silk trade and invention of paper. But in the same chapter (entitled ' Caravan Routes Across Asia ') we go on to ' The Arabs and the Lateen Sail '; in another chapter we begin with Phoenecian ships and Athenian galleys, then are launched into the Persian wars, roads and postal systems, before finally returning to ' The Galleys of Greece ' at the battle of Salamis.

The book is so nearly a great success that it is a pity it is not better constructed. The facts are all there and they well are told, but it is rather like a Christmas cake, so crammed with raisins that it is indigestible in spite of the excellence of the individual ingredients. On the whole the latter part of the book, which deals with coaches, Macadam's roads, steamships and railways, is more successful than the earlier part since it is easier to follow. The text of the second edition differs little from that of the first, though there are certain additions such as a valuable section on ' Primitive Transport Methods of Today ' which includes rafts, coracles and canoes. There is, however, a great improvement in the illustrations, which are poor in the first edition and very good indeed in the second; the sketch maps remain the same and are most helpful. SONIA COLE.

PRÉHISTOIRE DE L'AFRIQUE. *By* H. ALIMEN. *Paris, Boubée*, 1955. 578 *pp.*, 155 *figs.*, 28 *plates*. 3000 *francs*.

A new reference book on African prehistory was badly needed (the only one to cover the whole continent, Dr Leakey's ' Stone Age Africa ', was published over 20 years ago) and this attractive, well-planned volume will prove most useful; it certainly merits an English translation. In broad issues and in her grasp of essentials, Mlle Alimen is excellent; if she would supplement and correct details in any future edition, the student of African prehistory will have almost all he needs to know. The author of a work of this scope and magnitude should not be censured too severely for failing to keep completely up to date, for the literature nowadays is vast and often is not easily available. Nevertheless, it is always possible to submit regional sections to workers most familiar with each particular area before publication and it seems that this has not been done. There are a good many inaccuracies, and a few omissions, which could have been remedied quite easily by correspondence.

A regional approach has been chosen, the continent being divided into nine areas. As we should expect, Mlle Alimen is at her best on her own familiar ground in the Maghreb and the Sahara; if a disproportionate amount of space has been allotted to these areas, the result is very rewarding for English readers who may not know them so well. Within each section the regional geology—including marine, river and lake terraces, soil formations, fauna and tectonics—is described fully and competently, followed by discussions on climate and correlations. After details of the prehistoric industries, there are conclusions and a bibliography for each area. Numerous sub-headings make for easy reference, while geological sections, maps and correlation tables are plentiful and helpful. Table XI, showing absolute chronology based on radio-carbon dates, is particularly useful (though it might have been better to leave out the problematic East African dates based on long-distance varve correlations, and the radio-carbon date for Nachikufan I—4325 ± 250—could have been added).

After the nine regional sections there are chapters on fossil man, rock paintings and engravings, and megalithic monuments. The illustrations are mostly reproduced from earlier publications, though there are some original drawings and photographs, chiefly from collections in the Musée de l'Homme. Of the 28 plates, three depicting rock paintings

are in colour. Rhodesians will no doubt be startled to see Broken Hill man appearing under the heading of ' Hommes de Transvaal et du Kenya ' (Pl. XVI)!

The earliest Kenya ' Neolithic ' (the Hyrax Hill variant of the stone bowl culture) has been left out; so, too, has the Kenya Wilton B (though Wilton A is mentioned on p. 262). Another omission is the Nok figurines from Nigeria. The important Kalambo Falls site in N. Rhodesia is not mentioned (though its date of publication, June 1954, may have precluded this). Amongst the errors needing correction are the following:

p. 242. There is no ' Mousterian ' in Kenya; this term was abandoned as long ago as 1936 (*Stone Age Africa*, p. 58).

p. 244. No late ' Tumbian ' or Lupembian is known in Kenya, although it occurs in S.W. Uganda.

p. 265. The Njoroan culture, associated with full-length burials and polished axes, is not the same as the industry of the Njoro River Cave crematorium.

p. 267. The Kenya Capsian was not dated to 11,000 years by de Geer (this date refers to the Makalian wet phase); it is believed to be earlier, dating from the time of the Gamblian pluvial.

pp. 245, 268. The author of *The Pleistocene Geology and Prehistory of Uganda:* Part II, ' Prehistory ' (1952) is van Riet Lowe, not Leakey. Apparently this work was not available to the author, who quotes O'Brien (1939) for descriptions of industries in Uganda (many of these have been superseded as a result of the work of Wayland and van Riet Lowe).

pp. 325, 331, 404, etc. ' *Bubalis baini* ' should be *Homoioceras baini* (Bate, 1951).

p. 405. Skeletons found with shell-mounds were on the shores of Lake Victoria, not Lake Tanganyika.

p. 409. No human remains were found at Nachikufu.

p. 488. Cleavers are not present in Stellenbosch I (Chellean) but only in the Acheulean stages.

One wonders why the author has the impression that the incisor teeth of Kanam man were filed (p. 398), which she uses as an argument against his antiquity. There are also a good many misprints, e.g., Kariandsu for Kariandusi (Plate II), where the industry is Acheulean, not Chellean as stated; the First Pan African Congress on Prehistory was held in Nairobi in 1947, not 1937 (pp. 234, 249); Graziosi's Eibian culture is given as ' Eibianien ' (p. 228), but in any case it is now known as the Doian (Clark, 1952).

Reverting now from the particular to the general, Mlle Alimen is very good at pointing out essentials which are not always appreciated as well as they should be. Apart from some common trends, the archaeological succession in Africa is by no means the same as in western Europe; typological similarity does not necessarily imply synchronism. The terms Lower, Middle and Upper Palaeolithic, Mesolithic and Neolithic really only make sense in the Mediterranean zone; for the rest of Africa, Earlier, Middle and Later Stone Age are more appropriate. The author points out, too, that the East African pluvial and interpluvial phases are not necessarily applicable to the whole continent (this was, in fact, the subject of a resolution at the Third Pan African Congress on Prehistory in Livingstone, 1955).

The author stresses the essential continuity of African prehistory: the long series of pebble-cultures; the lengthy evolution of the hand-axe culture; the persistence of the biface technique in later industries, such as the Fauresmith; the long duration of the ' Levallois ' (prepared core) technique; and the conservatism of microlithic elements. The independence of this long evolution, she says, was disturbed by only two intrusions: the Capsian tradition and, in some areas, Neolithic elements (though in much of Africa

south of the Sahara there was no true Neolithic stage before the beginning of iron working). She also points out the impossibility of defining the start of Proto-history (the time when a prehistoric people first came into contact with an historic civilization); in North Africa, Proto-history started in Graeco-Roman times, elsewhere in some cases it was not until the 19th century. The survival of archaic elements, in fact, is as marked in African cultures, from pebble-tools down to Proto-history, as it is in the case of African faunas.

SONIA COLE.

THE ROCK PAINTINGS OF SOUTHERN AFRICA. Vol. I: 'The White Lady of the Brandberg.' *By* H. BREUIL. *Translated by Mary Boyle. Trianon Press for the Abbé Breuil Trust. Distributed by Faber and Faber, London*, 1955. *pp.* x, 31; 24 *plates*, 17 *photographs*, 1 *map*. £5 5*s*.

This book is a 'first' in several respects. It is the first of a projected dozen volumes in which the Abbé will present the results of his work on prehistoric rock paintings in the Union of South Africa, South West Africa, Southern Rhodesia and Basutoland while he was a member of the staff of the Archaeological Survey of the Union between 1942 and 1948. It is the first full description and complete reproduction of a single site in South Africa, and this is the first time that a whole volume has been devoted to one site.

The real and truly great value of the book lies in the excellent plates and the meticulous factual description of the paintings and superpositions which constitute the final three chapters of the text. This has been done as the Abbé alone can do it and places not only those interested in South African prehistoric art, but also all who will come after him, deeply in his debt. Only those who have attempted to copy rock paintings realize the difficulties involved. Each copyist must necessarily reproduce what *he* sees, and no two observers will see the same details. It matters little if one wishes to change an outline by a few millimetres, another to erase a stroke or alter a tint of colouring. Such minutiae need cause us no concern.

The title 'The White Lady of the Brandberg' refers to the most important figure in the latest of eleven successive series of paintings in the small shelter discovered by Reinhardt Maack in the Tsisab ravine of the Brandberg Mountains of South West Africa. The title is somewhat prejudicial to the controversy which has surrounded this figure ever since the Abbé first announced his interpretation of the painting, for there are some who claim that 'she' is no lady, but a man. It is also ambiguous, for it can mean that the painting is white, which it is not. It is a polychrome in white, two shades of red, and brown. It can also mean that the figure represents a person of European origin as the Abbé believes it does, but this too has been contested. In any case, it is well known that the use of colour was entirely arbitrary: an elephant painted in red was certainly never a red elephant and a human figure painted in white was not necessarily light-skinned.

Two introductory chapters tell of the fieldwork and how it came to be undertaken, and describe the site. Chapter III is contributed by Miss Mary Boyle who compares numerous features of the 'White Lady' series with paintings and practices of Crete and Egypt, and in subsequent sections the Abbé supports these views. He postulates two 'Nilotic' invasions of the south and goes so far as to suggest the route by which they travelled. Little attempt is made to find comparisons nearer home such as the helmet-like head-dress of the Ovambo or the distinctive bows of African peoples which have been the subject of comment by Walton. There is, indeed, no mention of the published criticisms of such local workers as van Riet Lowe, Schofield, Walton and Mason or the neutrality of Battiss. The Abbé and Miss Boyle are fully entitled to their opinions, but there is a danger that

those who read only this book may be unaware that not a single local worker agrees with their interpretations.

In dating the paintings the Abbé uses reasoning which we cannot follow. A radiocarbon dating of 3300 B.P. ± 200 (1550–1150 B.C.) obtained from carbon in the middle layer of Phillip Cave in the Erongo Mountain is associated, without evidence, with the middle level of paintings in the same cave and then transferred 70 miles to the White Lady cave on the slender grounds of similarities in paintings. The White Lady painting is the latest of eleven series in the cave and on general considerations is likely to be of a much later date than that which the Abbé ascribes to it.

In spite of these criticisms, the book presents an invaluable record, a classic in the literature on South African rock art. The theories are there for all to ponder, but the facts also are there for all to accept and build upon. We look forward to the remaining publications in the series—which it may be hoped will have a firmer binding—in full confidence that they will add enormously to our knowledge of the subject. B. D. MALAN.

PIECING TOGETHER THE PAST. *By* V. GORDON CHILDE. *Routledge and Kegan Paul, London,* 1956. 8 *in. by* 5½ *in.*, 176 *pages.* 18*s.*

This is not, as its title might nowadays suggest, another book written to satisfy the growing popular interest in archaeology; it is a highly technical—and, of course, authoritative—work designed primarily to meet the needs of serious students of archaeology, though some practising archaeologists could profitably absorb some of the lessons it contains. Its aim is to explain the techniques and the technical terms used by archaeologists, especially pre-literate archaeologists, and the technical meanings given by them to ordinary words. Professor Childe is anxious to bring some sort of precision into the subject, but, apart from a few elementary definitions, scientific precision is elusive and seems likely to be unattainable. He is critical of the inconsistencies in current archaeological nomenclature and practice and points out how confusing and ambiguous they may be; yet he has refrained from proposing any ideally logical system of classification and terminology, largely on the ground that nobody would adopt it if he did. The student must make the best of the situation as it is, and, once he understands Professor Childe's explanations, should be able to avoid serious error.

Even more valuable, perhaps, than the explanations themselves is the cautionary advice with which they are presented. The path which Professor Childe marks out for his readers has many warning notices along its course. For instance: ' Typology is a rather dangerous device and must be used only with due precautions ' (p. 71), and ' the neatest typological series may turn out to be bogus ' (p. 73). Primitive man may have done things simply because he liked doing them and for no ritual or utilitarian purpose whatever. While it is true that archaeologists looking for an explanation of prehistoric relics may profitably consider the equipment and technology of still living barbarian tribes, yet, says Professor Childe (p. 55) ' no existing society is so exactly the representative of any past society, known exclusively from archaeological data, that its rituals or social institutions can provide precise and reliable information of the more puzzling relics and monuments from the pre-historic past '. He does not lose sight of the fact that the only practical use of archaeology is to distil some sort of history from ' surviving archaeological scraps ' and in his final chapter he deals with this aspect of his subject. He rejects various speculative and obscurantist theories and returns again to the point that there are limits to the extent to which we can project ourselves into the past,

especially into the world of ideas. He is insistent that we do not, and cannot ever, know the motives, the emotions and the ' ideological delusions ' of primitive man.

This is an important book, the product of clear thinking and unrivalled experience.

F. ADDISON.

LA PUERTA DE LOS LEONES DE MICENAS Y LA COLUMNA MINOANA. *By* L. I. RAJKAY, *Acta Cientifica Venezolana, Vol. VI, Nos.* 5 *y* 6, *Caracas,* 1955.

The author in this paper concerns himself with two architectural points in connection with the monuments of Mycenae. The first point he deals with is the relief of the Lion Gate. This he thinks is later in date than the gate and the walls, and was put in its present position at a much later period. He bases his beliefs on the character of the walls, the Cyclopean construction of which he believes to be much older than the lion relief. Further he compares the style of the lion relief with that of the grave stelae from Schliemann's grave circle and concludes that they cannot be contemporary. He thinks the relief was originally larger with a goddess standing on the top of the column and that it was cut down to fit its present position. The relieving triangle he believes to have been left open at first as also in the beehive tombs. He even suggests that the lion relief might be booty brought back from the ruin of Knossos. As can be seen from his bibliography he has not had the opportunity of consulting the principal archaeological reports and descriptions of the Lion Gate and Mycenae in general. He thus overlooks the fact that the grave stelae date from Late Helladic I and that the Lion Gate relief dates from Late Helladic III and that there is thus a period of at least a century between them, which could easily account for an advance in style. It is unlikely that so huge a block of limestone could have been transported from Crete to Mycenae. The material in any case seems to be local and there is no sign of recutting on the top or on the edges. Further it is most unlikely that the relieving triangle in a fortification gate would have been left open and if the author had been able to consult any good publication of the beehive tombs he would have seen that their relieving triangles were filled in as in the Tomb of Genii.

His explanation of the downward tapering of the Mycenaean wooden column is ingenious and practical. Mycenaean columns, however, stand *on* stone bases and were not let *in* to them. It is to be hoped that the author will continue his researches on Mycenaean architecture and be able to study the actual monuments on the site.

A. J. B. WACE.

A HISTORY OF THE GIZA NECROPOLIS, Vol. 2: (Hetep-heres). *By* G. A. REISNER. *Completed and revised by* W. STEVENSON SMITH. *Harvard University Press.* (*Cumberlege,* £10).

We have had to wait a long time for the publication of the tomb of Queen Hetep-heres, but our patience has been rewarded by an excavation report which is really above all serious criticism, and the claim on its dust cover that the volume embodies one of the most brilliant achievements of modern archaeological method is not exaggerated.

When in 1925 the funerary equipment and empty sarcophagus of the ancestress of the royal family of Dynasty IV were discovered in a deep burial shaft at Giza, Egyptologists at once realized its importance. But I think even those who have been fortunate enough to see the objects exhibited in the Cairo Museum will only now realize the supreme value of the find, both from the historical evidence supplied from the inscribed material and the information on arts and crafts gleaned from the painstaking reconstruction of the decayed and shattered objects. Some conception of the magnitude and success of the work of reconstruction can be gained by an examination of the excellent drawings of

Dr Smith on figures 19 and 20, which are indeed a most valuable lesson to the student of archaeological method. One can only regret the absence in this fine report of any coloured illustrations, for only these could do justice to the magnificent furniture. Although the photographs are good, in black and white they fail to do justice to the beauty of the curtain box, the bed canopy, the bed and the carrying chair. I suppose that here the question of publication cost was considered by the authors; but the absence of colour still remains a matter of regret.

The mystery of the bogus burial of this great queen remains unexplained and it will probably continue to be so until her original tomb is discovered either at Dahshur or Giza. Reisner found the sealed sarcophagus and complete burial equipment undisturbed since it had been assembled at the bottom of shaft G. 7000 X more than 4500 years ago. But when the sarcophagus was opened, it was found to be empty, although nearby the canopic chest contained the viscera of the queen. Moreover, Cheops' offerings to his mother's spirit were found in a niche in the west wall of the shaft; there can, therefore, be little doubt that the king believed that his mother's body rested in the tomb at the bottom of this deep pit at Giza. Reisner's explanation of the absence of the actual burial, although plausible, is not entirely satisfactory. He suggested that Queen Hetepheres was buried somewhere near the pyramid of her husband Snefru at Dahshur. Her tomb was rifled by robbers and the knowledge of this outrage was soon discovered by the authorities, who, afraid of the king's anger, convinced him that little damage had been done, closed the empty sarcophagus and reburied it with all the funerary furniture at Giza. This theory is ingenious, but there are certain factors which it does not explain.

Firstly, the fact that the funerary furniture appears to have been untouched, or at least very little damaged, would suggest that the tomb robbers had only reached a preliminary stage in their plundering before they were discovered. It is of course true that the first object of their search would be the sarcophagus, but at such an early stage in the robbery it would appear very unlikely that the body would be completely destroyed. From long experience we know it is only after repeated robberies over a period of many years that no trace remains of the actual burial.

The other point which needs explanation is why Cheops decided that the reburial of his mother must be secret. The shaft G. 7000 X had no trace of any superstructure above it, and the filling and paving above its mouth leaves little doubt that every attempt to conceal it had been made. Even though the queen's tomb had been violated at Dahshur, it seems strange that the builder of the Great Pyramid should be so uncertain of his power that he was forced to rebury his mother's remains in secret. One cannot help thinking that there may have been political reasons behind this very curious procedure. However, at the present state of our knowledge, Reisner's theory fits the facts better than anything else. But it must not be reckoned as more than a tentative theory; it must not ultimately become an historical fact, which unfortunately has occurred so often in the history of Egyptological research. W. B. EMERY.

LIVIA'S GARDEN ROOM AT PRIMA PORTA. *By* MABEL M. GABRIEL. *New York University Press.* Library of Congress, Catalogue Card Number 55–10111. Printed in Germany at J. J. Augustin, Glückstadt, pp. vii + 55, 36 plates. Retail price, $12.

The paintings of the garden room in Livia's villa, near the village of Prima Porta, have been generally acknowledged as the greatest example of naturalistic painting of Roman times ever since they were published by Brunn in 1863, but they have never been illustrated as fully as they deserved, though some features that have now perished may be restored from the plates of Antike Denkmäler. In the first chapter Mrs Gabriel describes the villa

itself, and was enabled to study the structure of the walls behind the frescoes which have themselves been removed to Rome. The walls, she remarks, ' were covered with vertically placed roof-tiles measuring approximately 61 by 44 cm. The original upper faces of the tiles with their raised edges were placed against the walls; they are held together by iron cleats, and generally have two corner notches at one of the short ends. These tiles were so placed to protect the paintings from the dampness.' The author's style is plain without frills and marked by short sentences, but personally I find her writing very pleasant reading and one of the major charms of the book. The printing is excellent and if some details on the photographic plates are less clear than I could wish, this appears to be due not to the fault of the photographer, but partly to damages and fading, and partly to the impressionistic technique, which leads Mrs Gabriel to term the picture of a jay eating an arbutus berry ' a forecast of an Audubon painting ', and the indication of massiveness in some fruits by the use of light and dark planes as ' a forecast of Cezanne ' (compare the quinces on Pl. XIV). These garden paintings are usually classed along with those of the third Pompeian style, but this comparison does them an injustice. This is the high-water mark of naturalism which appears in other Campanian pictures, but never elsewhere in such abundance or to such perfection. The architectural element is here reduced to a minimum, a low stone balustrade separating us from this splendid wild garden, the lattice fence separating us from the path, and above the suggestion of what Mrs Gabriel ingeniously interprets as an ' incannuciata ' or thatch of reeds covered with stucco and used to roof pergolas.

Thylander considered the paintings of the Auditorium of Maecenas to be in the same style, but Mrs Gabriel objects that the designs of the latter are stiff and isolated in separate niches, without the continuity of the Prima Porta paintings, and, to Schazmann's comparison with the paintings of the house of the consul Attalos in Pergamum, she objects that the Pergamene plants stand isolated, and there is a fondness for formal vases with a bird on each side.

The unity and continuity of the paintings in Livia's house are the more remarkable when we reflect that they are by several hands. In her fourth chapter the author analyses the work of these ' Individual Masters ' and makes a comparison with a Renaissance *bottega*, where several pupils worked under a master painter who conceived and probably blocked in the main design and then devoted his personal attention to Panel II, his own ' masterpiece which was to set the standard for all the other paintings '. The sparkling, broken highlights, painted in short dashes instead of in long ribbon-like lines, are seen throughout this panel; only our master could convey brilliance in this manner. It is found in none of his pupils' work.

Sixty-nine varieties of birds and a much smaller variety of plants are depicted in these paintings. In Chapter 6 the author has given a descriptive catalogue of the birds which seems, so far as my limited knowledge permits me to judge, to be a very honest piece of work. She claims to be neither horticulturalist nor ornithologist, but despite her plaintive remark in the preface that she ' searched the bookstores in Rome for works on Italian birds with no results ', she seems nevertheless to have consulted quite a number of books on the subject. She identifies a warbler, but not the *beccafico* or garden warbler, which one would have expected to find in this garden since it was a favourite Roman delicacy, the only bird which the epicures devoured whole, bones and all (Norman Douglas, *Birds and Beasts of the Greek Anthology*, p. 93). One of the master's best pupils specialized on birds, and his work is distinguished by the fact that he ' applied his colour in many lines, marking out each feather.'

To sum up, this is a book that all libraries should possess, and as many individuals as can afford it.

R. W. HUTCHINSON.

ROCK PAINTINGS OF THE DRAKENSBERG. *By* A. R. Willcox. *Max Parrish.* 80*s.*

Twenty years ago reproductions of cave art offered a choice between hand-drawn copies that were suspected of flattering the originals and ill-lit monochrome photographs that certainly failed to do them justice. Now colour photography has come to save us from the horns of this dilemma. If it is never likely to give us anything to compare in imaginative force with Breuil's famous renderings of the French and Spanish paintings, it can nevertheless produce very fine effects that are at the same time quite free from any subjective influence. I have never seen its possibilities better used than in Mr Willcox's studies of the Bushman paintings from the Drakensberg range of south-east Africa. As far as I can judge the colours are remarkably true and, although the detail is sometimes difficult to see, the total effect of pictures that largely depend on total effect is very good indeed.

Mr Willcox uses the term 'Bushman art' for convenience, without, as he says, prejudging the issue as to whether it is in fact all the handiwork of this diminutive race of hunters—extinct in the Drakensberg for the last sixty years. Nevertheless, as the evidence is assembled, it becomes quite clear that he does not believe in the need for inverted commas. Breuil and his followers have built up a sequence of styles with a chronology carrying the earliest back to the Middle Stone Age cultures (in the African terminology). Mr Willcox shows, with a moderation hard to refute, that this scheme rests on the arbitrary selection of superpositions and on an identification of industries with paintings inspired by little more than wishful thinking. As he says, there is usually no more justification for associating a wall-painting with any of the prehistoric occupation levels below it than with the Coca-Cola bottle lying on the surface. Only at one site, the Solwezi cave in Southern Rhodesia, is there reliable stratigraphic proof of such an association, and there, although Carbon 14 analysis gives a most improbably early date, the art can be identified with a Late Stone Age, Wilton-like, culture attributable to Bushman stock. For Mr Willcox himself, the only important stylistic classification that can be established is that all the polychrome paintings are late, dating from after A.D. 1700. If there is no kind of proof of any of the southern African paintings being pre-Bushman, neither is there of the representation of 'foreigners' other than Bantu, Boers and Englishmen. The cloaked figures and other cattlemen are undoubtedly Bantu wearing their *karosses*, the rest are Bushmen or recent European settlers. In my opinion this judgment cannot reasonably be denied.

I disagree with Mr Willcox only on two minor matters. One is that the human figures are *all* much more conventionalized than the animal. I believe that if one were an eland most of the portrayals of one's kind would seem just as highly stylized as those of humans—or more so, for there is no reason to suppose elands to be more objective than ourselves. Secondly, I find the wish to equate the naturalistic Bushman and Palaeolithic art with the unintellectual vision of a young child or with 'perceptual innocence' in general, to be a dangerous one.

The main conclusions of Mr Willcox's very lucid text hold a message for European archaeologists. If he and his fellow workers are generally unable to find sufficient evidence for complex chronological classification of Bushman art, an equally objective approach would almost certainly result in similar conclusions concerning Franco-Cantabrian painting. In particular, the reality of the two cycles, Aurignacian and Magdalenian, would appear to be unproven. The sad truth is that the imaginative use of pigment on cave walls cannot be dragooned by the Napoleonic methods that have yielded such splendid results when applied to safely stratified industries. An entirely fresh start is needed and one that makes much fuller comparative use of the home art. I hope it will soon be undertaken.

Jacquetta Hawkes.

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